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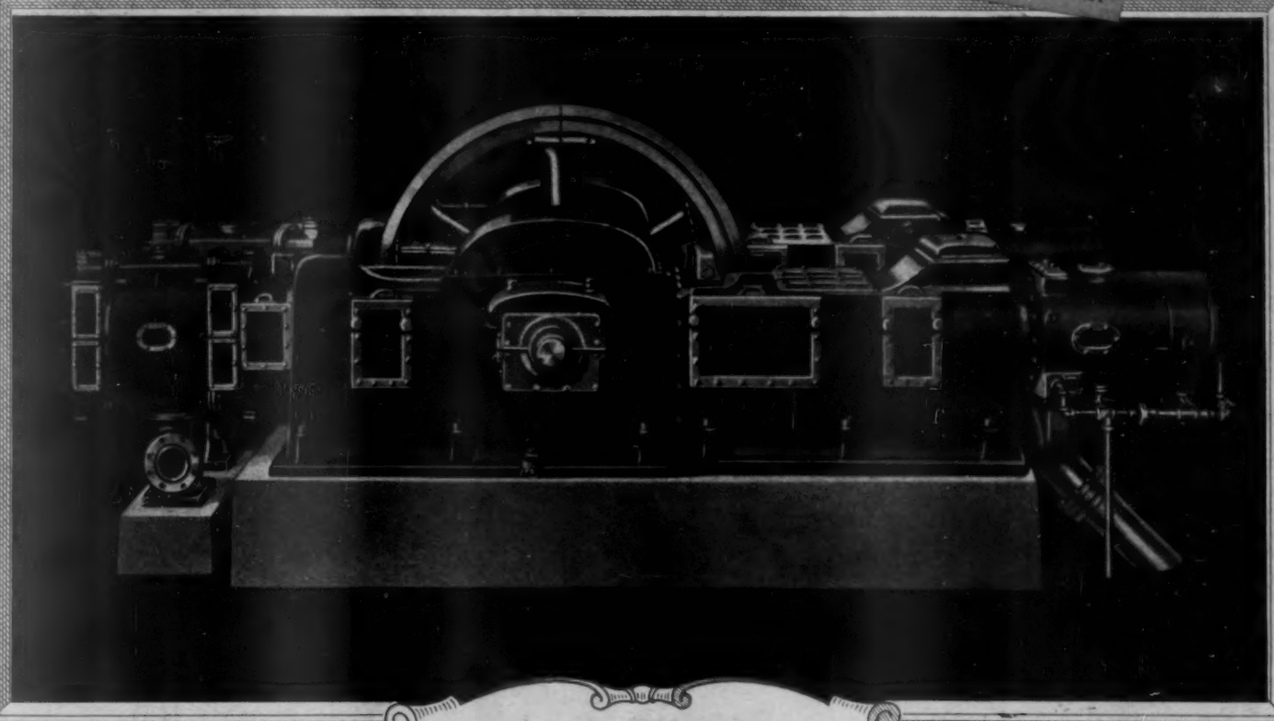
The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

Published Every Thursday TULSA, OKLAHOMA, SEPTEMBER 5, 1929 $6.00 a Year



Bessemer Type 10 Gas Engine

We Like That Bessemer Type 10

BECAUSE it does its work well, day in and day out, this sturdily built two cycle compressor has made many friends among oil and gas field men.

A good two cycle engine, such as the Bessemer Type 10 has certain recognized advantages. First, the investment cost is low. Second, their simplicity of design insures lower operating costs for both labor and maintenance. With gas economizers added, even the fuel costs almost equal the best four cycle economy. It is easy to understand therefore why oil and gas field operators in increasing numbers are saying "We like that Bessemer Type 10!"

No change will be made in the manufacturing policy of Bessemer Type 10's. The combined engineering staffs of the two merged companies will continue to make improvements from time to time to further justify the high standing of this engine.

The regular demand for these engines makes it practical to build them on a quantity production basis. This means that they can usually be shipped from stock for quick delivery.

THE COOPER-BESSEMER CORPORATION

Formerly The C. & G. Cooper Co. and The Bessemer Gas Engine Co.

Mount Vernon, Ohio Grove City, Pa.

1116 Magnolia Bldg., Dallas 640 E. 61st., Los Angeles, Calif.

Bessemer Bldg., Tulsa, Okla.

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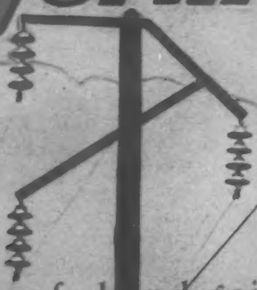
PRE-PROVED

by past performances



Prompt shipment of poles, roofed and gained to meet your special needs—poles ready for the hole upon arrival—can be depended upon from *International.* The large stock always on hand—an adequate crew of skilled pole framers make quick shipment a positive assurance. Quality in poles—in treatment—in preservative is paramount to *International.*

Large and small orders carefully executed

International Creosoting & Construction Co.

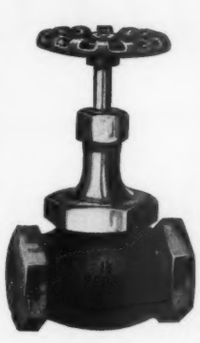
General Office: Galveston, Texas

International

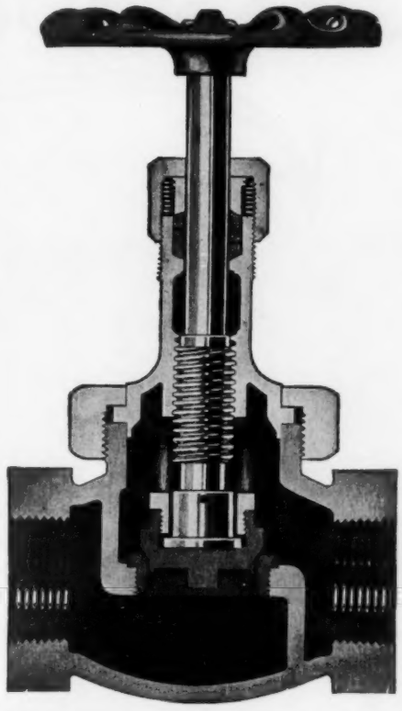
Highest Quality

Creosoted Yellow Pine Poles

Walworth FERRO Regrinding Valves



GLOBE



ANGLE

150 Pounds Working Steam Pressure

EVERY WALWORTH VALVE IS INDIVIDUALLY TESTED

FOR ALL KINDS OF HARD JOBS

An "all service" valve, economical in first cost and long enduring under hard service. Especially recommended on steam lines where corrosion and wire drawing attack brass, and on certain acid and other chemical lines where the iron body and renewable and regrinding Sigmalloy seat and disc combat the deteriorating effects to which ordinary valve parts succumb. Construction of the seat and disc is such as to make the seat self-cleaning.

In actual service the working parts of this valve have proved practically indestructible. The "Ferro" has been adopted as a general-purpose valve by many important industrial concerns.

At the Sixth International Petroleum Exposition and Congress, Tulsa, Oklahoma

In booths 104, 105, 106 and 107, Oklahoma Building, Walworth is showing a complete line of valves, fittings and tools, and Walworth C.N.I. Pipe.

WALWORTH

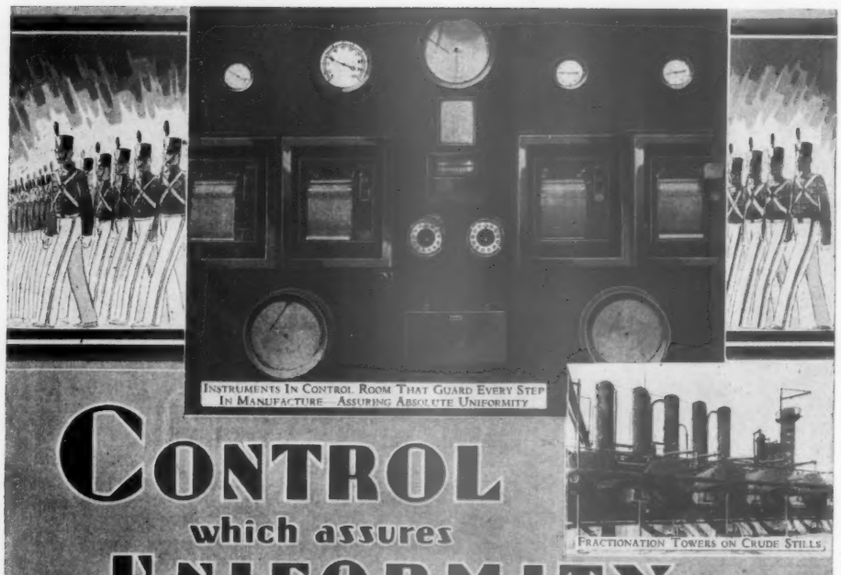
Walworth Company, General Sales Offices: 51 East 42nd St., New York
Plants at Boston, Mass.; Kewanee, Ill.; Greensburg, Pa.; and Attalla, Ala.

Distributors in Principal Cities of the World

Walworth International Co., 11 Broadway, New York, Foreign Representative
Walworth Company Limited, 620 Cathcart St., Montreal, P. Q.

The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription price $6.00 a year; 15 cents a copy. Entered as second-class mail matter December 15, 1911, at the post office at Tulsa, Okla., under the Act of March 3, 1879.

Close Refining Process Control!



INSTRUMENTS IN CONTROL ROOM THAT GUARD EVERY STEP IN MANUFACTURE—ASSURING ABSOLUTE UNIFORMITY

FRACTIONATION TOWERS ON CRUDE STILLS

CONTROL which assures UNIFORMITY

Successful jobbers realize the only way to increased profits is through volume sales. More and better satisfied customers. In this age a superior product is the only means of attracting increased trade. Not just gasoline—but gasoline of higher quality than the average—gasoline that is always of *uniform* quality. Here at El Dorado we have provided every modern facility of fractionation and control to make certain *your* products will be of uniform high quality.

Every process in the manufacture of our gasolines is governed by positive control. Extremely sensitive instruments are used in the control of uniformity. The mechanisms are as delicate and accurate as the finest watch movement. Conditions of temperature and pressure are governed by valves that are timed in absolute precision with the instruments. No chance for deviation. Uniformity assured.

El Dorado Gasolines will give your customers a better reason to give you more of their business. Phone or wire for a trial car today.

The ELDORADO REFINING Co.
ESTABLISHED 1916
ELDORADO, KANSAS
JUST PHONE L.D. 11

helps sales as well as production

THE El Dorado Refining Company, of El Dorado, Kansas, have a highly modern equipment of Brown Automatic Control Recording Pyrometers, Recording Pressure Gauges, an Indicating Pyrometer for checking, assuring close maintenance of temperatures and pressures essential to quality and low cost production.

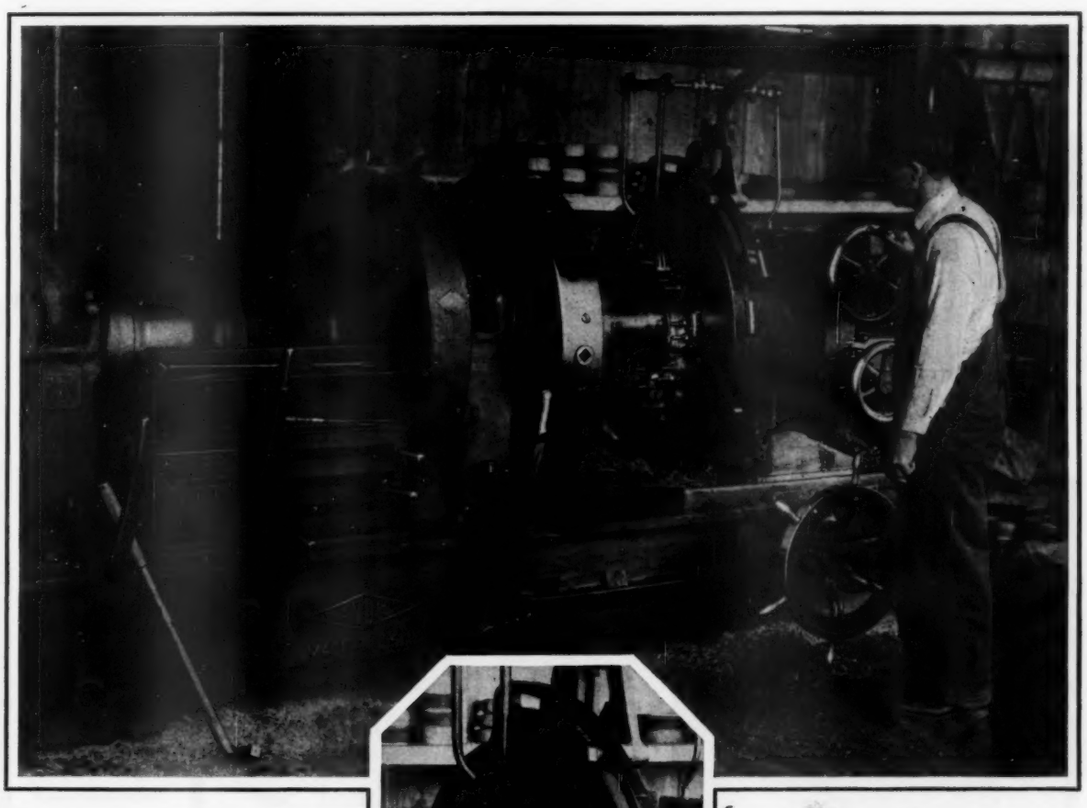
The advertisement reproduced herewith, published by this progressive concern, is evidence that the management of this company appreciates the value of capitalizing its use of this equipment as a means of winning consumer preference.

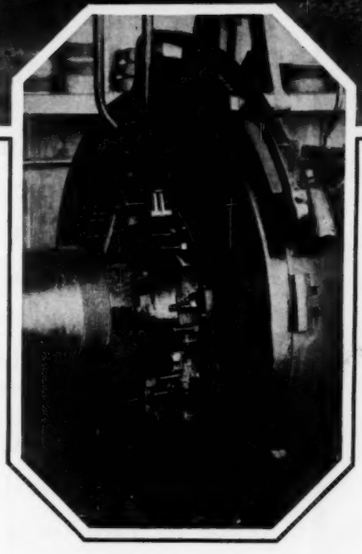
Brown Engineers will gladly cooperate in equipping your plant with an instrument installation which will, most effectively, meet your requirements of economic production; and to which you can point with pride in bidding for the trade and confidence of your prospects. Write for information.

THE BROWN INSTRUMENT COMPANY
4488 Wayne Avenue, Philadelphia, Pa.
Branches in 20 principal cities.

Brown Automatic Controls

"To measure is to economize"





High Production!

It may never be necessary to run a pipe threading machine twenty-four hours a day, but the Landis Pipe Threading and Cutting Machine will readily meet this requirement should it ever present itself. Rigid construction and unusually fast cutting speeds make the Landis a heavy duty, high production unit for oil country threading.

Low Operating Cost!

Tool cost—an item which is too often overlooked when threading machines are purchased—is reduced to a minimum by the use of Landis threading equipment. The Landis Chaser, due to its extra length, has a life which is far in excess of the life of ordinary dies, and in addition one set of chasers will thread a wide number of pipe sizes.

Accuracy!

As an assurance against the loss of valuable time and equipment, oil country threads must be well formed and correctly tapered. The distinctive design of the Landis chaser insures cleanly cut, well formed threads, and the simple grinding feature makes possible the cutting of full length, correctly tapered threads at all times.

The Landis 12″ Machine, located at the Pacific Pump Works, Huntington Park, Calif., is but one of many Landis Pipe Threading and Cutting Machines that are producing quality threads efficiently and economically. Let us show you how to carry on your threading operations more profitably. Send specifications today.

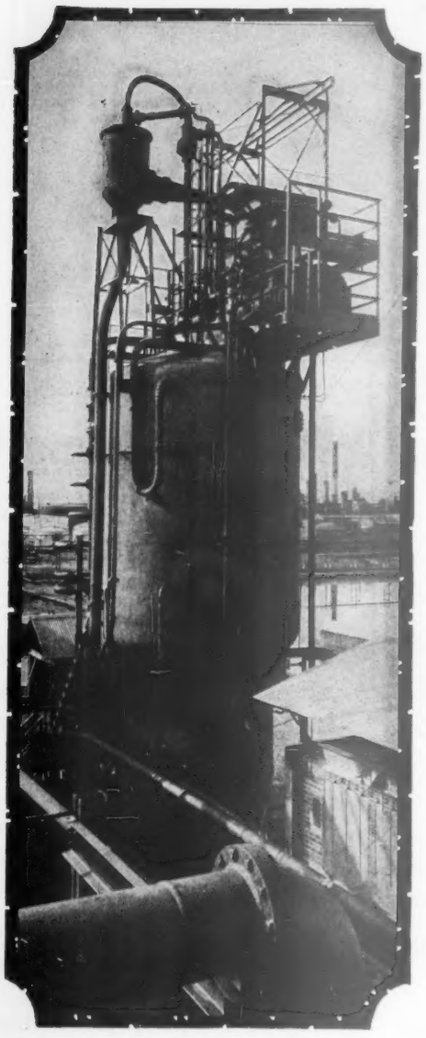
LANDIS MACHINE COMPANY, Inc., Waynesboro, Pa.

Detroit Office—5928 Second Blvd.
Cleveland Office—504-505 Marshall Bldg.

REPRESENTED IN THE DOMESTIC OIL FIELDS BY: Colcord-Wright Machinery & Supply Co., St. Louis, Mo.; D. S. Mair Machinery Co., Houston, Tex.; Woodward, Wight & Co., New Orleans, La.; Herberts Machinery & Supply Co., Los Angeles, Calif.; Herberts Moore Machinery Co., San Francisco, Calif.; Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.

FRACTIONATING TOWERS

While we build complete refining units for all purposes and have under construction approximately thirty-four such units at the present time, we also furnish a great many fractionating towers used in connection with heaters or stills constructed by the purchaser.



As we have pointed out many times, the fractionating towers and systems are the most important part of the refining unit and our many years' experience in distillation in general, together with our research work and extended practical experience in furnishing a large variety of complete units and hundreds of towers, enables us to furnish the best fractionating equipment obtainable.

The following Companies are some of those who have purchased BADGER Equipment:

Magnolia Petroleum Co., of Texas
Shell Petroleum Corp.
Craig Oil Co.
Freedom Oil Works Co.
Texas Pacific Coal & Oil Co.
Gulf Refining Co.
Skelly Oil Co.
Phillips Petroleum Co.
Pierce Petroleum Corp.
Tide Water Oil Co.
Anglo-Persian Oil Co., Ltd.
Empire Refineries, Inc.
Marland Oil Co.
Vacuum Oil Co.
Associated Oil Co.
Barnsdall Corp.
Humble Oil & Refining Co.
Tidal Refining Co.
Standard Oil Co. of N. J.
General Petroleum Corp.
Beacon Oil Company
Lubrite Refining Co.
Pennzoil Company
Shell Company California
New Orleans Refining Co.
Emlenton Refining Co.
Independent Refining Co.
Richfield Oil Co.
The Texas Co.
Sinclair Refining Co.

E. B. BADGER & SONS COMPANY

NEW YORK · TULSA · LOS ANGELES · BOSTON

Crew of the Haliburton Oil Well Cementing Company filling a cave in a well owned by the Cromwell-Franklin Oil Co., near Oklahoma City. 700 sacks of "INCOR" were used; drilling operations were resumed 60 hours after cementing.

Speed with Dependability in Oil Field Work

TIME is vitally important in oil well work and speed must be coupled with lasting dependable results.

Meeting this double need for speed and dependability, "INCOR" Brand Perfected High-Early-Strength Portland Cement is attaining unprecedented success in the oil well field.

"INCOR" produces permanent dependable *Portland* Cement Concrete ready to use in 24 hours. No admixtures, no new methods, no guess-work—*because* "INCOR" *is a perfected Portland cement.*

Recently a cave was encountered at 5334 feet while drilling for the Cromwell-Franklin Oil Co., near Oklahoma City. With characteristic efficiency the Haliburton Oil Well Cementing Company had the cave cemented using "INCOR" Cement and drilling operations were resumed 60 hours later.

Similar successes in cementing with "INCOR" Brand are reported almost daily from fields throughout the oil country. In many cases, "INCOR" has been used to fill caves and crevasses when all other methods have failed!

"INCOR" Brand Perfected High-Early-Strength *Portland Cement* mixes readily without lumping; it is actually quicker, easier, and less expensive to use than ordinary Portland cement with accelerator. Next time you have a difficult cementing job, or need concrete that you can use within 24 hours, give "INCOR" a trial.

INTERNATIONAL SYSTEM
LONE STAR
CEMENT

Outstanding quality and a policy of fair business dealing have earned nation-wide recognition for LONE STAR Cement. Now, to meet the need for dependable 24-hour concrete, the makers of LONE STAR also offer "INCOR" Brand.

A PERFECTED HIGH-EARLY-STRENGTH
"INCOR"
PORTLAND CEMENT

* Reg. U. S. Pat. Off.

INTERNATIONAL CEMENT CORPORATION

342 Madison Avenue, New York

One of the world's largest cement producers—13 mills . . . total annual capacity 21,000,000 bbls.

SUBSIDIARIES

LONE STAR CEMENT COMPANY ALABAMA, Birmingham, Alabama
LONE STAR CEMENT CO. INDIANA, Inc., Indianapolis, Indiana
THE CUBAN PORTLAND CEMENT CORP., Havana, Cuba
LONE STAR CEMENT CO. PENNSYLVANIA, Philadelphia, Pennsylvania
THE LONE STAR CEMENT CO. (KANSAS), Kansas City
LONE STAR CEMENT CO. VIRGINIA, Inc., Norfolk, Virginia
LONE STAR CEMENT CO. NEW YORK, Inc., Albany, New York
LONE STAR CEMENT CO. LOUISIANA, New Orleans, Louisiana
ARGENTINE PORTLAND CEMENT CO., Buenos Aires, Argentina
LONE STAR CEMENT COMPANY TEXAS, Dallas and Houston, Texas
URUGUAY PORTLAND CEMENT COMPANY, Montevideo, Uruguay

They KNEW

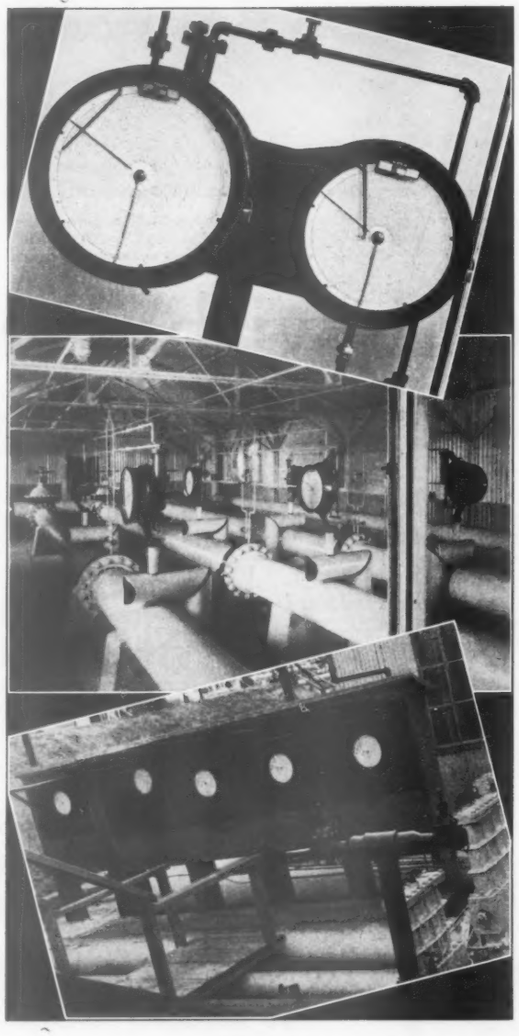
what they wanted

PROVED—BY THE UNPARALLELED SALES OF THE FOXBORO ORIFICE METER

LEADING oil and gas engineers knew what they wanted in an orifice meter. They found all the desirable characteristics they were looking for in the Foxboro Orifice Meter. Unparalleled sales prove it. Perhaps Foxboro's Orifice Meter is the one you have been looking for.

Why not get the benefits of the *inherent accuracy* of the Foxboro Orifice Meter? This Instrument provides written records of flow that are the bills of lading for oil and gas delivered. These records are accepted by leading oil and gas companies as sight drafts for goods received. Checked and cross-checked, these records stand the test. That's accuracy for you. Foxboro has developed this Orifice Meter so that you can have an Instrument that will measure wet or dry gas accurately.

A letter to the nearest Branch Office brings you full information. If you are going to the Sixth International Petroleum Exposition at Tulsa, October 5-12, see the Foxboro exhibit at Booths 4, 5, and 6.



1 Easy to Clean.

2 Easy to Read.

3 Easy to Zero.

4 Quick to Assemble.

5 Uniform Pen Travel.

6 Uniform Scale Chart.

7 Static tube movements of Type 200 Orifice Meters made of chrome nickel steel—do not rust or corrode—not affected by sulphur fumes of gases.

The Foxboro Guarantee, sealed to each Recording and Controlling Instrument.

8 Lowest Maintenance Cost.

9 Interchangeable Parts.

FOXBORO
Reg. U. S. Pat. Off
THE COMPASS OF INDUSTRY

THE FOXBORO COMPANY
Neponset Ave., Foxboro, Mass, U.S.A.
28 North Guthrie Ave., Tulsa, Oklahoma
Magnolia Building, Dallas, Texas
J. E. Treacy, Strada Golesti No. 9, Ploesti, Roumania
New York, Chicago, Boston, Philadelphia, Pittsburgh, Cleveland, Rochester, N.Y., Atlanta, Los Angeles, San Francisco Portland, Ore., Detroit, Salt Lake City
Agents for Robinson Patented Orifice Flange Fittings

Instruments for Controlling, Recording and Indicating Temperature, Flow, Humidity and Pressure

A Letter From Harry G. Nye

TO THE OIL MEN OF THE U. S. A.

Nye Three-Wheel Pipe Cutter
Barnes Type

Equipped with Three Nye Knurled Cutter Wheels

No. 1	$ 2.48 net
No. 2	3.30 net
No. 3	5.50 net
No. 4	11.00 net
No. 5	16.50 net
No. 6	22.00 net

West of Rocky Mountains 5% Extra.

NYE
Saunders Pattern Pipe Cutter

The Nye Saunders type pipe cutter is equipped with Nye knurled wheels. All parts are interchangeable.

No. 1	$ 2.00 net
No. 2	3.00 net
No. 3	7.33 net
No. 4	12.00 net
No. 5	18.67 net

West of Rocky Mountains 5% Extra.

Nye Drop Forged
Pipe Cutter

Equipped with Nye Knurled Wheels

No. 1-A Complete	$2.75 net
No. 2-A Complete	3.30 net
No. 3-A Complete	5.50 net

West of Rocky Mountains 5% Extra.

"BEEFSTEAK AND ONIONS"

FELLOW CITIZENS:

You take a beefsteak smothered with onions (of course you don't take it, you buy it, you know what I mean), but you take a beefsteak smothered with onions, suffocated with the things, and there is about the finest delicacy anybody ever thought up. I used to think so, and now I know so, because I said so to a doctor, and he said, "Yeah, it's good—good for high blood pressure, if that's what you want."

These darned doctors. One of them said to me one time, "If you eat nothing but vegetables, and drink nothing but water, and never eat any pie, cake, pudding, or candy, and cut out smoking, and go to bed at nine every night and get up at six every morning, and walk five miles a day, you'll live to be a hundred." I said, "Yes, and what for?"

Now, a man ought to take care of himself, I don't deny that. He ought to get eight hours sleep every night (at least every night when there isn't anything else to do), and he ought not to eat a lot of high pressure foods if he wants low pressure arteries. And he ought not to smoke like a bonfire of wet leaves, like some fellows do.

He ought to keep his waistline somewhere near specifications, and indulge in some athletic sport besides poker. He ought to get some exercise—and if he is a plumber or steamfitter, he will. But what I am talking about is the big boy in the office, whose athletics is reading the baseball news, and who calls a cab to go to the corner to mail a letter.

But, on the other hand—well, there used to be a saying, "It's a great life if you don't weaken." But here's a better one: "It's a great life if you weaken just a little." Be good, but don't be so darned good you're no good. It takes a strong man to say no, but he's a lightweight compared to the man who can say, "That's enough."

Iron bends, but steel never breaks. A man ought to be like a Nye tool, made of steel, not iron, and so sure of himself that he can tackle any situation and know that he isn't going to give up and go under, any more than a Nye tool will, no matter how heavy the pipe or how rough the usage. That kind of a man will live a long while—and that kind of a tool.

Sincerely yours,

HARRY G. NYE.

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HARRY G. NYE
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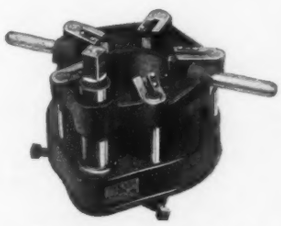
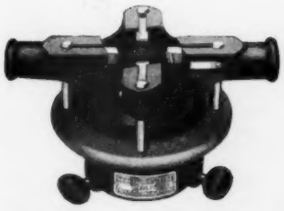
Otherwise Known as
THE NYE TOOL & MACHINE WORKS
4120-30 Fullerton Ave., Chicago, Ill.



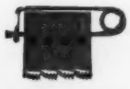
Nye No. 2 (Toledo Type)
Geared Threading Device
Improved

Capacity 2½ in. to 4 in. inclusive.
Net price complete $50.00
West of Rocky Mountains 55.00



Nye No. 1 (Toledo Type) Stock

The rugged construction and few working parts account for the simplicity and durability of these Nye Receding models. They do the work easily and efficiently.
No. 1 Nye Receding Pipe Threader, complete ..... $9.60 net
West of Rocky Mountains $10.80

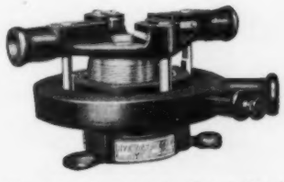


Nye (Toledo Type) Chasers
Fit Nos. 1, 1A and 2 Nye
(Toledo Type) Stocks

Each set is guaranteed in every particular. Will cut much easier than other similar dies.

No. 1, 1" to 1½"	$ .75 per set net
No. 1, 2"	1.25 per set net
No. 2, 2½" to 4"	3.60 per set net

West of Rocky Mountains 5% Extra.



Nye No. 1A (Toledo Type) Stock

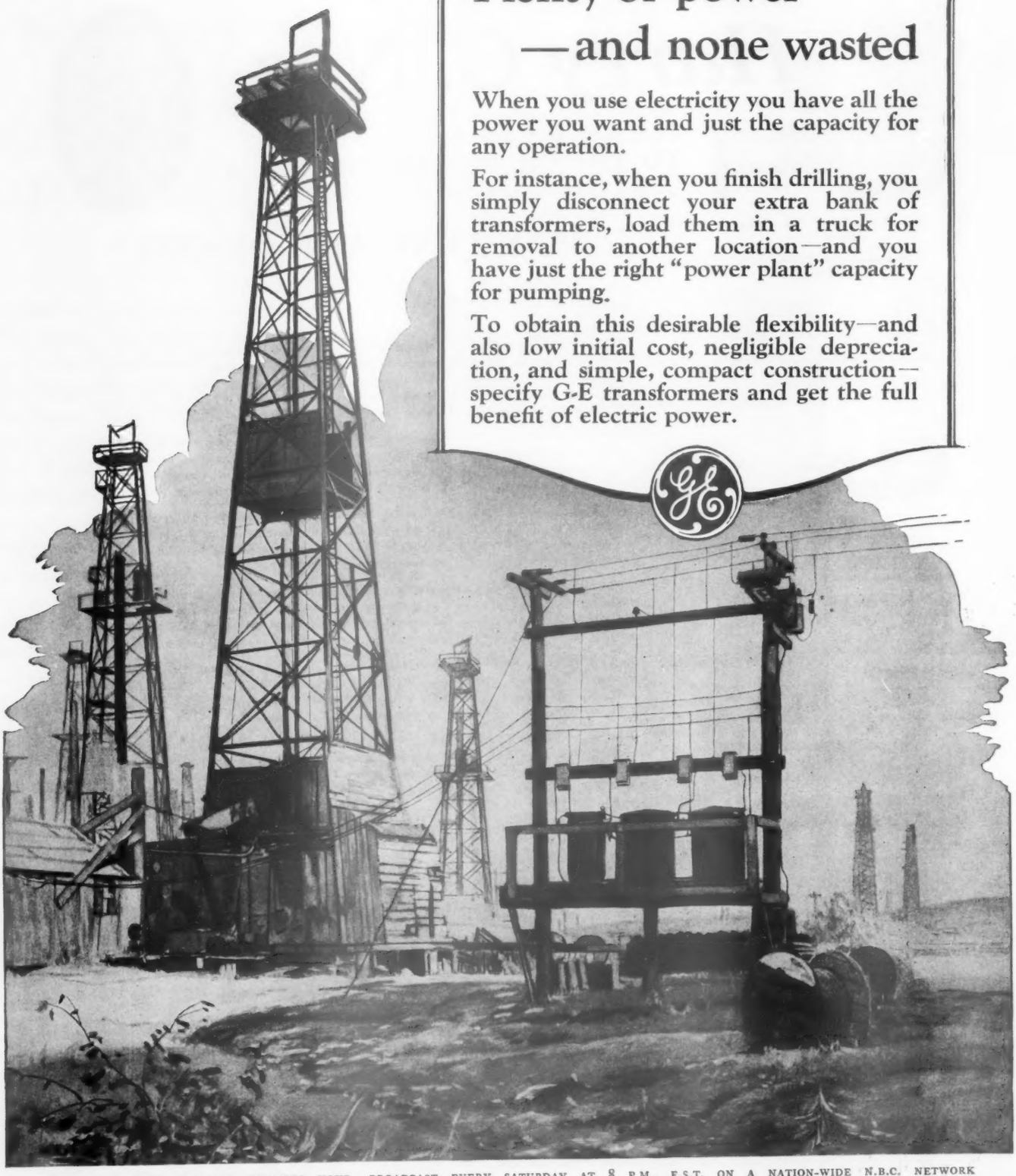
The No. 1A is the same as the No. 1 except that it is equipped with a ratchet for work where space is restricted.
No. 1A Nye Receding Pipe Threader, complete ..... $12.00 net
West of Rocky Mountains $13.50

Plenty of power —and none wasted

When you use electricity you have all the power you want and just the capacity for any operation.

For instance, when you finish drilling, you simply disconnect your extra bank of transformers, load them in a truck for removal to another location—and you have just the right "power plant" capacity for pumping.

To obtain this desirable flexibility—and also low initial cost, negligible depreciation, and simple, compact construction—specify G-E transformers and get the full benefit of electric power.

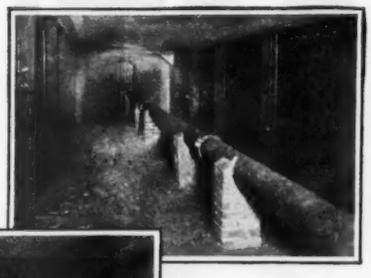


JOIN US IN THE GENERAL ELECTRIC HOUR, BROADCAST EVERY SATURDAY AT 8 P.M., E.S.T. ON A NATION-WIDE N.B.C. NETWORK

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES

"For every joint on every line"



16" cast iron water main, Cleveland, Ohio.

Gathering lines in the oil fields.

8" cast iron water main, Cleveland, Ohio.

30" cast iron water main, Cleveland Union Terminals Co., Cleveland, Ohio.

VICTAULIC COUPLINGS

It took two men ten minutes per joint to install Victaulic Couplings on the 30" water main for The Cleveland Union Terminals Co. Five minutes was the average time for installing Victaulic Couplings on the 16" water line. The couplings for the 8" line went on at the rate of one in three minutes. Two minutes is the average time per Victaulic Coupling on oil-field gathering lines.

Speed, ease and economy of installation with any available labor—flexibility—freedom from line strain due to contraction and expansion—fitness for any required pressure—permanently leak-proof joints — these are the things that have made Victaulic Couplings standard for oilfield and oil refinery lines the world over—that are steadily winning specification on water, gas, sewage and compressed air lines.

Victaulic Couplings and Fittings are available for steel, spiral weld, wrought iron and cast iron pipe in all sizes from ¾ inch up—for any required pressure.

VICTAULIC COMPANY OF AMERICA
26 Broadway New York

For detailed information, typical installations, prices, etc., write or mail the coupon.

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PITTSBURGH SUPPLY COMPANY
Pittsburgh, Pa.

Ohio
CASE HARDENING SERVICE CO.
Cleveland, Ohio

All-purpose pipe couplings

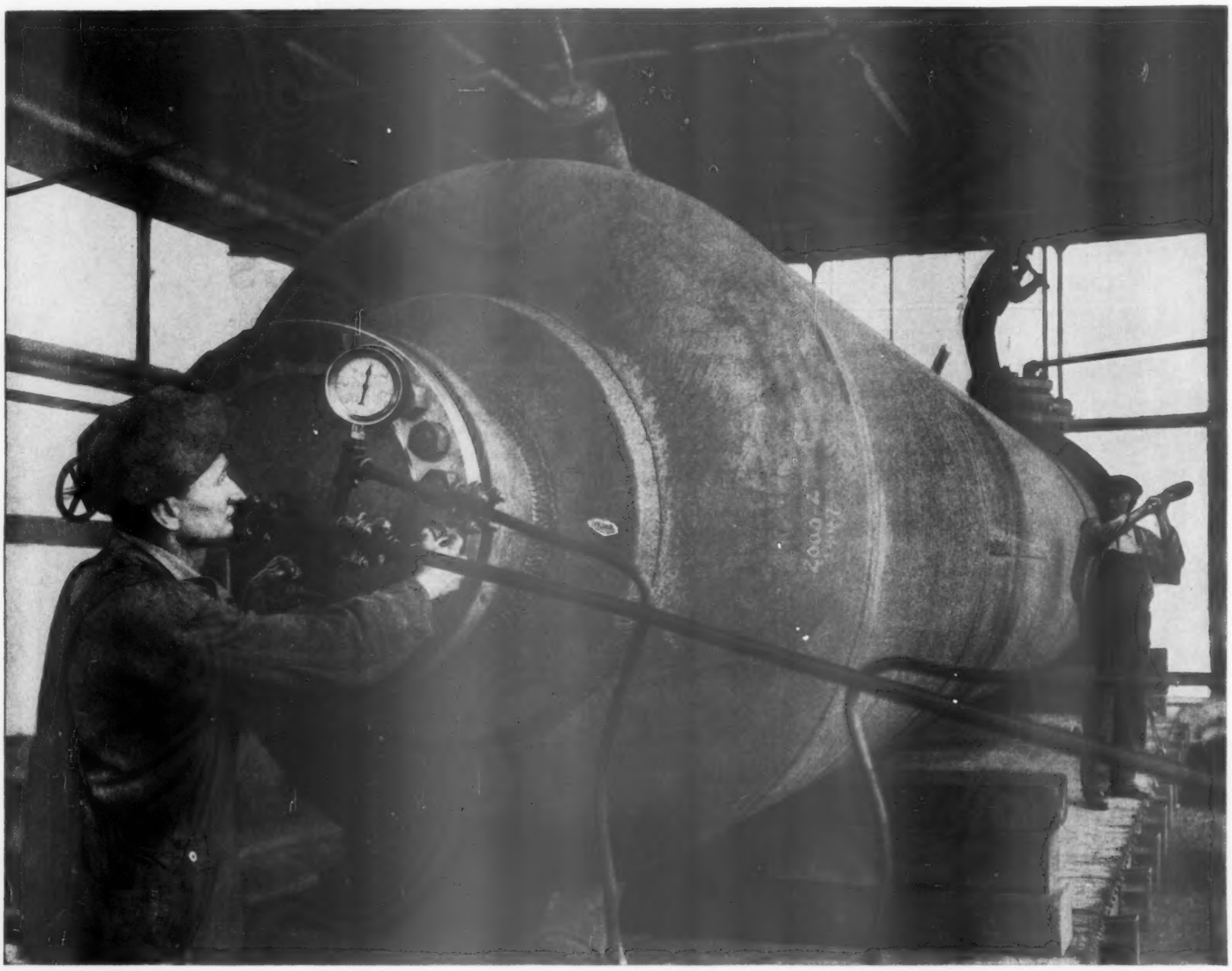
"For every joint on every line."

FLEXIBLE LEAK-PROOF
VICTAULIC
REG U.S. PAT. OFF.
PIPE COUPLINGS

Victaulic Company of America
26 Broadway New York
Please send Victaulic Bulletin No. 1
Name _____
Street _____
City _____

FOR CRUDE OIL, GAS, WATER, SEWAGE, COMPRESSED AIR, ETC.

TESTING FOR OPERATING



SMITH*WELDED*

SAFETY

Pressure Vessels are not released from this plant until they have passed the repeated stress test, the hammer test, and the maximum pressure test.

These tests are carried out at pressures greater than will be used in service—under procedure to simulate the most severe operating conditions.

This procedure is original with the A. O. Smith Corporation and is the most careful and exacting that has ever been devised.

The tests made under it, are the final operation in A. O. Smith Engineering for Safety in Oil Cracking.

A. O. SMITH CORPORATION

General Offices: Milwaukee, Wis.

Oil & Gas Field Products Division

District Offices at: New York , Tulsa , Houston , Los Angeles

CRACKING STILLS

Strong traps in Okmulgee . . .

WHEREVER oil engineers find need for traps in steam, gasoline or oil lines, the name *Strong* on a trap means highest efficiency and lowest maintenance cost to them. Strong traps are built ruggedly to endure oil field and refinery use under all conditions with the least attention. Their design has proved so highly efficient that they have for many years fixed a standard for comparison on any basis that is good business judgment for comparison.

Here is one of these well-known machines trapping gasoline from scrubber tanks on the Okmulgee property of the Oklahoma Natural Gas Corporation. Its dependability is not a matter of doubt—its operating efficiency is constant. Oil field engineers who specify Strong traps for the first time quickly discover that they can unhesitatingly recommend them again. Strong traps have ANUM-METL seats and discs—an alloy that is well-nigh indestructible in use. Should the slightest leak occur in a Strong trap within a year from installation, a new seat and disc will be provided without charge. Ask for *BULLETIN* 100-A, the Refinery and Gasoline Plant Catalog.

STRONG CARLISLE & HAMMOND

For the gasoline plant and refinery there are Strong Anti-Freeze Relief Valves, Atomizing or Blending Valves, Cushion Non-Return Valves for compressor and field lines, Gas Engine Stops,

Gasoline and Steam Separators, Mineral Seal Oil Traps, Separating Traps, Vacuum Traps, Lifting Traps, Steam Traps, and combination Vacuum-Pressure Relief Valves.

MANUFACTURERS OF STRONG SPECIALTIES—CLEVELAND, OHIO

LINDE Scores Again

TO meet the imperative demand for utmost efficiency in oil and natural gas distribution, a seamless tube manufacturer recently developed a super high-test pipe. Obviously, to obtain any benefit of this new development, the joint had to be at least as strong and preferably stronger than the pipe. Available joints were not good enough.

The problem was put up to Linde. And through the efforts of the Linde Research Laboratories and Development Division, an oxwelded joint was developed that in repeated tests outpulled the pipe with never a failure in the weld. Linde had scored again.

Linde Process Service is available without cost to users of Linde Oxygen.

THE LINDE AIR PRODUCTS CO.

Unit of Union Carbide and Carbon Corporation

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General Offices: Carbide and Carbon Building
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LINDE OXYGEN

for

True Vapor Phase Refinery

***for* WESTERN T. V. P. CORPORATION**

(Licensed Under Patents of Petroleum Conversion Corporation, New York)

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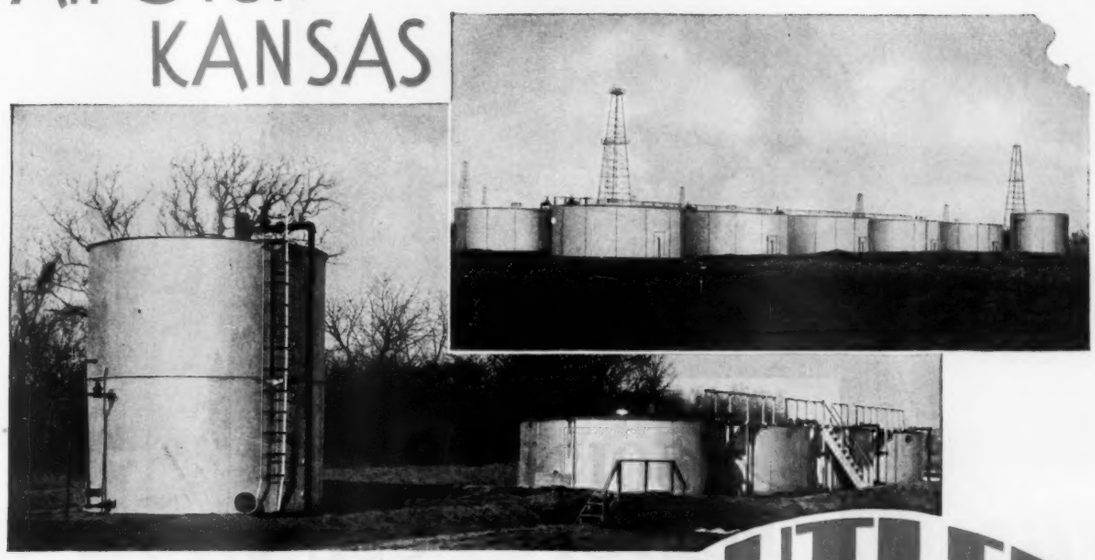
All Over KANSAS



ALL over Kansas—wherever oil is produced—it's Butler Bolted Tanks. But there is no particular reason to boast of the good fortune of Kansas alone. Practically every other oil producing region of the country is just as fortunate in this respect.

Check over the list of Butler dealers below. You will find them strategically located to render quick field tank service. Most producing companies have long ago found them adequately stocked and capably manned to render—day or night—the dependable field tank service on which to safely rely.

Back of this outstanding field service are bolted and welded field tanks of substantial design and faultless construction. Because of precision punching and forming and fewer seams, Butler Bolted Tanks are erected faster and with fewer operations. Bolt holes are uniform as to size and spacing because placed there with a single stroke of a huge machine. All steel plates formed for a given size tank are interchangeable. Man-sized clean-out openings, 2 x 4 feet, are standard and the bolts are removable from the ground. Butler welded tanks are one integral steel unit with the stamina to withstand the pressure of treating processes.

Butler Bolted Steel Tanks are made in sizes up to and including 10,000 barrels capacity. Butler Welded Steel Tanks are made to any specifications. Information about both is in the catalog "Butler Oil Field Tanks".

BUTLER MANUFACTURING COMPANY

1244 Eastern Ave., Kansas City, Missouri

944 Sixth Ave. S. E., Minneapolis, Minn.

It's

BUTLER BOLTED TANKS

In addition to its long established standards of Bolted Tank construction, The Butler Manufacturing Company is in production of Bolted Steel Tanks conforming with dimensional standards—A. P. I. first edition. Butler A. P. I. specification Bolted Steel Tanks will carry the official monogram reproduced here.

This, and the Butler monogram, is double pledge of the utmost value in Bolted Steel Tanks.

These reliable dealers are ready to render speedy Butler Bolted Tank Service:

Drane-Humphrey Co., at San Angelo, Big Lake, Pyote and McCamey, Texas; and Roswell, New Mexico.

Keyes-Butler Tank Co., of Casper and Cody, Wyoming.

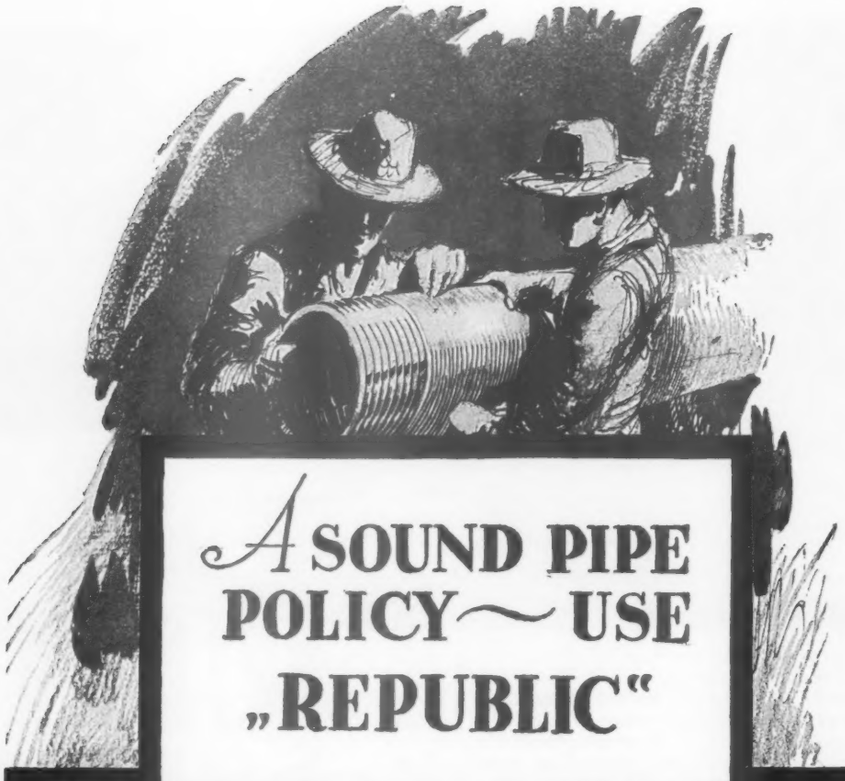
Drane Tank Co., at Tulsa, Holdenville, Seminole, Hallett and Shawnee, Oklahoma; El Dorado, Madison, Wichita and Valley Center, Kansas.

Muskegon Boiler Works, Muskegon, Michigan.

Gulf Coast Tank Company, 1612 Moffit Street, Houston, Luling and Refugio, Texas, V. P. Hughes, Prop.

Thomas Moran at Oil City, Shreveport and Georgetown, Louisiana.

M. A. Trimmer, at Blackwell and Lovell, Oklahoma.



A SOUND PIPE POLICY—USE „REPUBLIC"

It's a safe, sound and economic policy to standardize on Republic tubular goods in the oil and gas fields.

The name Republic on steel pipe and casing guarantees uniformity, high quality of material, clean threads well protected, and general excellence of workmanship.

Adherence to rigid standard specifications backed by a rigorous system of tests and inspections makes it practically impossible for inferior products to pass to the market from Republic mills.

Thus, Republic gives *you* the most protection by protecting itself. Use Republic pipe and casing for constant satisfaction.

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Casing
Line and
Rotary Drill
Pipe

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Buffalo
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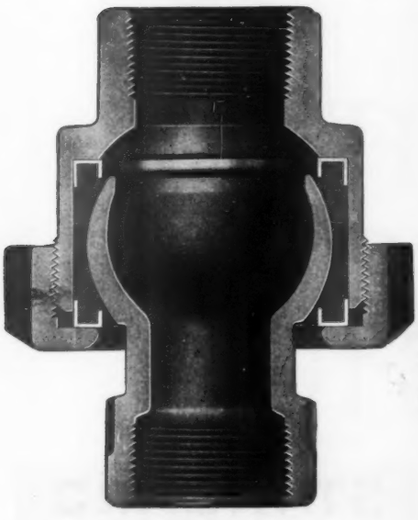
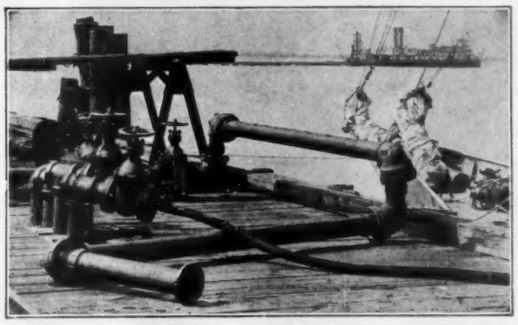
REPUBLIC
IRON & STEEL CO. YOUNGSTOWN O.
PIPE & CASING

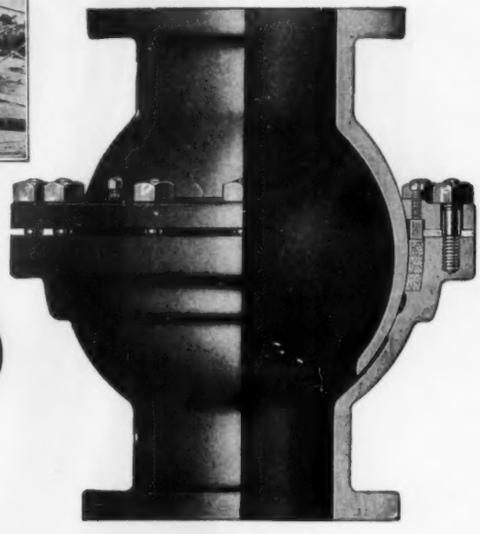
Cross sectional view of Barco Flexible Joint with screw ends.





Installation of Barco Flexible Joints on a loading dock.

Cross sectional view of Barco Flexible Joint with flange ends.



BARCO

Flexible Joints

Cut pipe line maintenance on loading docks

Flexibility is essential in the pipe lines on a loading dock. You get it with Barco Joints without accompanying high maintenance costs. There are over 1,000,000 Barco Joints in use. Long trouble-free service is the rule. Gaskets cannot blow out.

Stop the interruption to service resulting from burst hose by installing Barco Joints.

Barco Manufacturing Co.

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Agents:

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The Steam Supply & Rubber Co., Seattle, Washington
Greene Brothers, Wichita Falls, Texas
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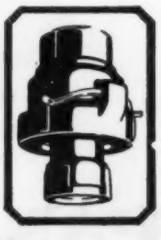
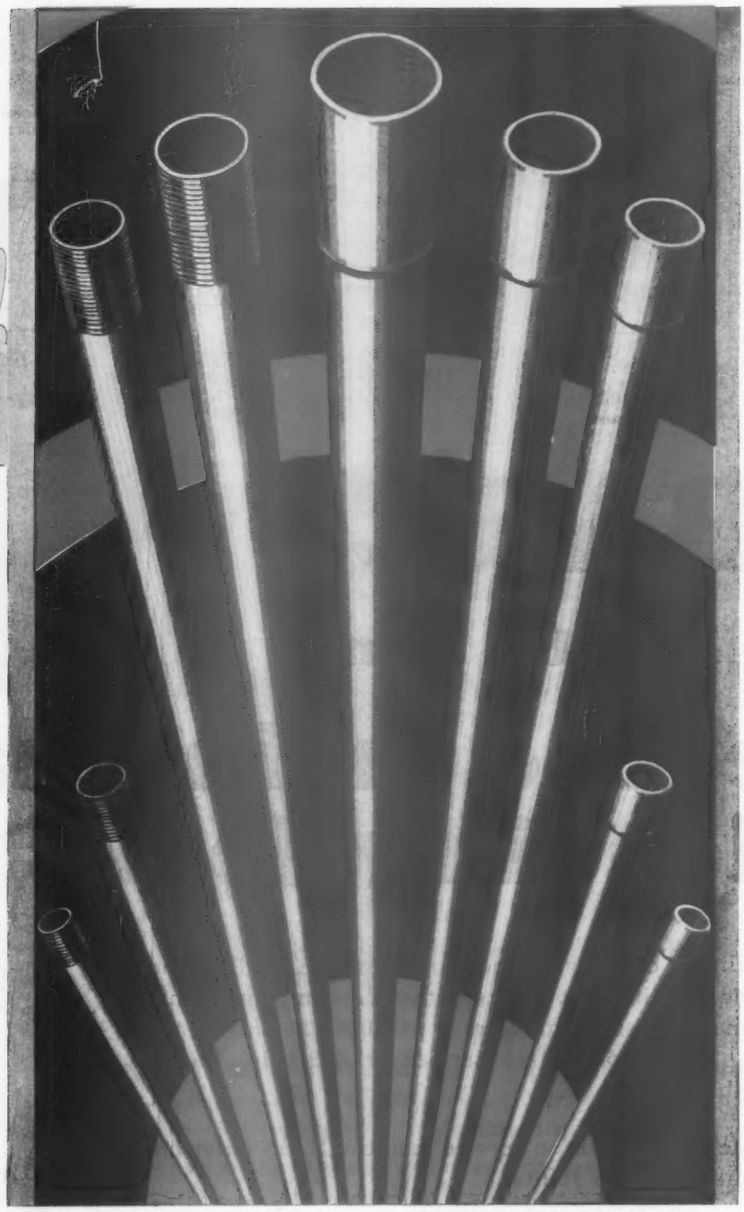
BARCO



Valves and Joints



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CASING
STANDARD PIPE
LARGE O. D. PIPE
LINE PIPE
DRIVE PIPE
DRILL PIPE

Sizes ⅛ inch to 24 inch O. D.

STANDARD

SEAMLESS

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TUBING
DRILL PIPE
(Regular and Heat Treated)
LINE PIPE
STILL TUBES

Sizes 2 inch to 13⅜ inch O. D.

STRONG yet DUCTILE,

Since 1828

No matter what you consider important in pipe, Spang Pipe has it. Take strength, for example. Every length of "Spang" Welded and "Standard" Seamless Pipe is tested to withstand pressures higher than you will ever subject them in service—That means the maximum factor of safety for any emergency.

Another thing, you will like about Spang Pipe is the soft, easy working quality of the special steel—saves time and labor.

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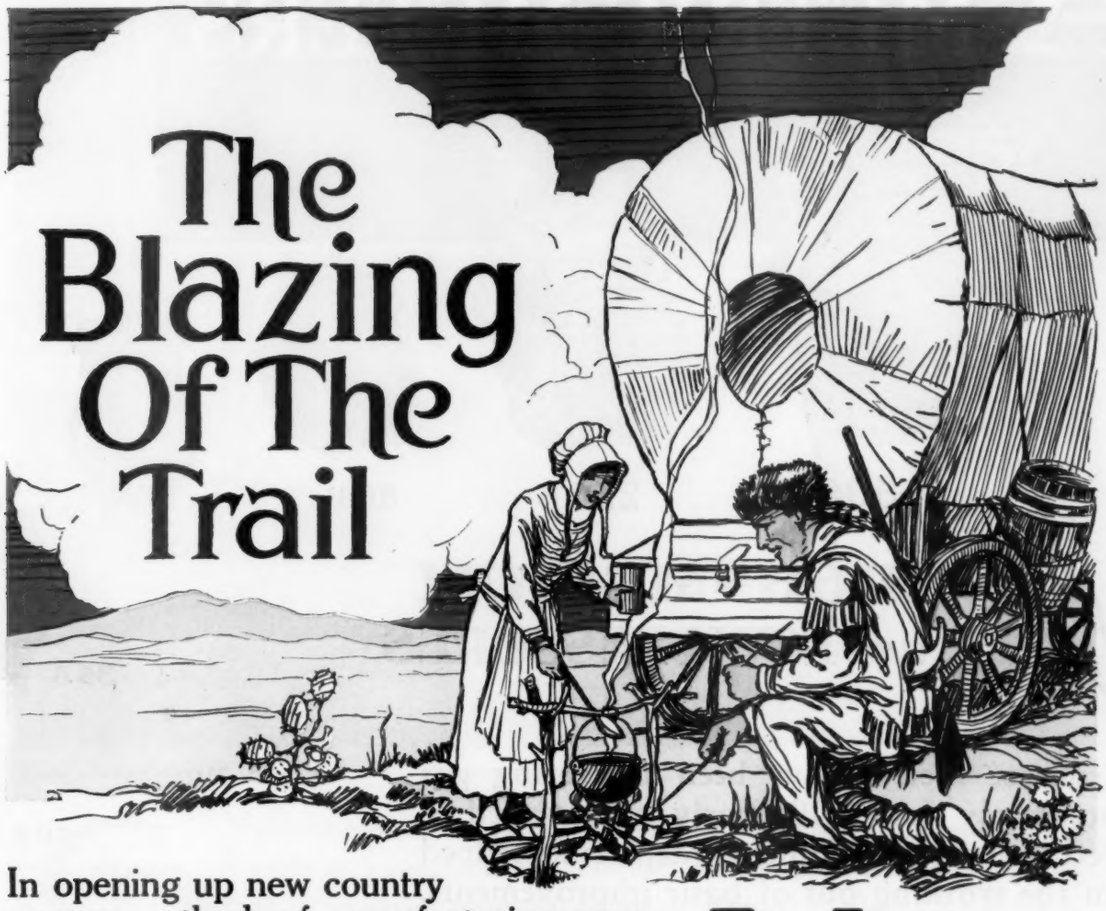
Sales Offices: CHICAGO, ILL. NEW YORK, N. Y. ST. LOUIS, MO. PITTSBURGH, PA. TULSA, OKLA. LOS ANGELES, CAL.

Welded Mills: ETNA, PENNA. SHARPSBURG, PENNA. ***Seamless Mills:*** AMBRIDGE, PENNA.



In opening up new country or new methods of manufacturing practice, the pioneers bear the brunt of blazing the trail, overcome dangers and make the way safe.

The Henry Vogt Machine Co. were the pioneers of Drop Forged Steel Valves and Fittings. They have kept pace with industrial development and have met every modern demand in Drop Forged Steel Valves and Fittings for high pressure and temperature work. Vogt Valves and Fittings assure safety and economy in any plant.

Vogt

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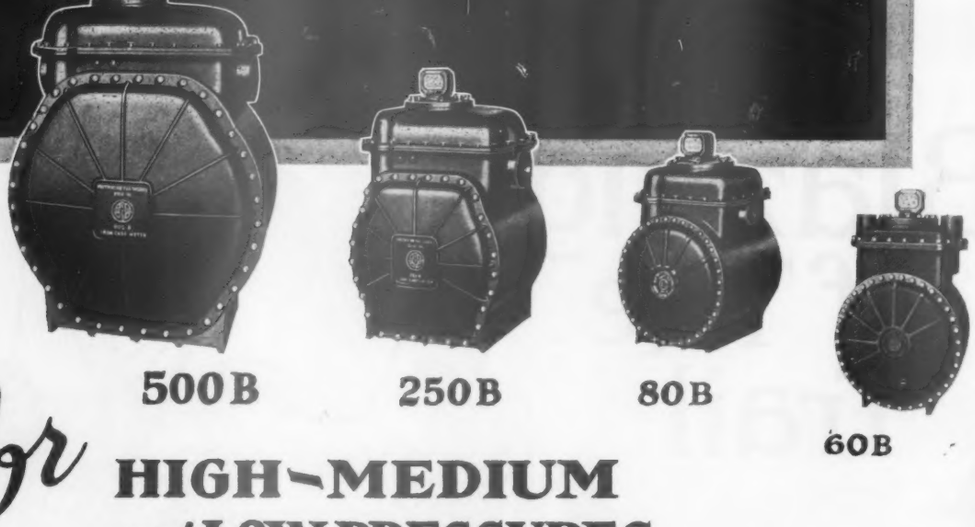
Manufacturers of: Oil Refinery Equipment, Drop Forged Steel Valves and Fittings, Water Tube and Horizontal Return Tubular Boilers, Ice Making and Refrigerating Machinery.

A Complete Line of METRIC METERS



500B 250B 80B 60B

for **HIGH-MEDIUM *and* LOW PRESSURES**

35B

Ironcase Meters have been measuring gas accurately since 1910. Early successes led to refinements. Accumulated experience helped in the working out of basic improvements. Progress has been made consistently in designs. New sizes have made possible new and wider applications.

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At present, Ironcase Meters are giving greater satisfaction than ever in almost every type of gas measuring. They present a complete range of sizes and capacities, facilitating standardization on one design for widely varying requirements.

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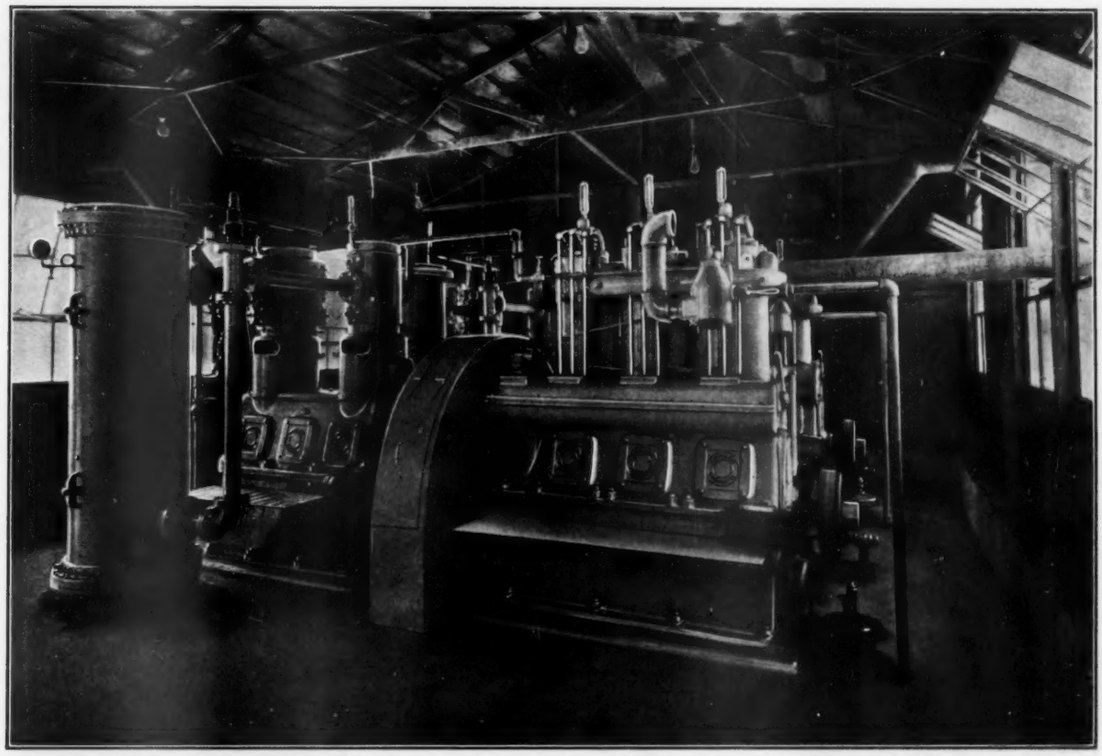
METRIC METAL WORKS
of the American Meter Company-Inc.
-ERIE-PENNSYLVANIA-U-S-A-

IRON-METERS-CASE



An installation of two CP duplex two-stage vertical compressors, each direct-connected to a CP gas engine. Vacuum Oil Co., Lake Charles, La.

CP direct-connected oil or gas engine driven compressors provide an exceptionally compact compressed air or gas plant that cannot be excelled in EONOMY, RELIABILITY and SMOOTHNESS of OPERATION. Capacities in this type compressor range from 423 to 3000 cubic feet per minute; pressures from 10 to 1000 pounds per square inch. Send for illustrated descriptive bulletin.

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COMPRESSORS

BORIUM for SPEED

A BORIUM-mounted bit is an all-formation bit. It *cuts . . . goes through . . .* regardless! And, it not only makes more straight hole *faster,* but, at the same time, decreases costly "pulling" and "reaming". . . . BORIUM is the original diamond substitute *. . . far less costly! . . .* efficient in *all* formations! There are imitations and "almost-as-goods" galore, but there is only *one* BORIUM! Drop us a card for complete information.

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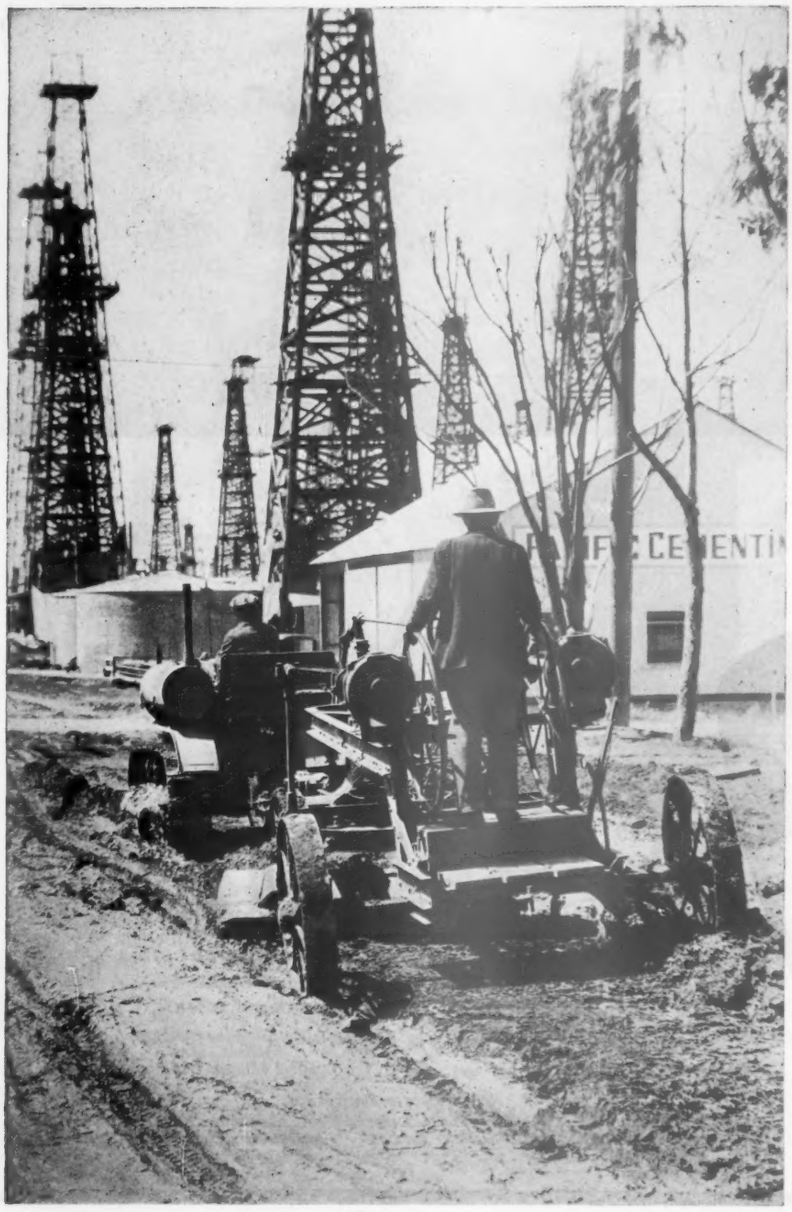
Good roads, Bad roads, No roads at all!



OFTEN as not the oil producer doesn't have time to build roads. Never mind, the "Caterpillar" Tractor pulls the load 'cross country or helps loaded trucks over the bad spots when necessary. Then, at the first opportunity, the same "Caterpillar," hitched to a Russell Grader, builds better roads for faster traffic. And the same "Caterpillar," in after days, fitted with a winch, pulls rod and cleans wells. Nimble and willing, bigger than the weather, the "Caterpillar" has been called *the mule of the lease.*

Prices—f. o. b. Peoria, Illinois

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FIFTEEN	$1500	THIRTY	$2475
SIXTY	$4300		

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EXECUTIVE OFFICES: SAN LEANDRO, CALIFORNIA

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"Caterpillar" Tractors

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REG. U. S. PAT. OFF.
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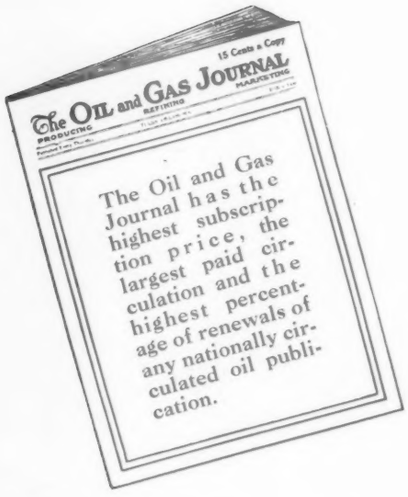
For special Exposition copy in "show issues" of The Oil and Gas Journal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The Oil and Gas Journal has the highest subscription price, the largest paid circulation and the highest percentage of renewals of any nationally circulated oil publication.

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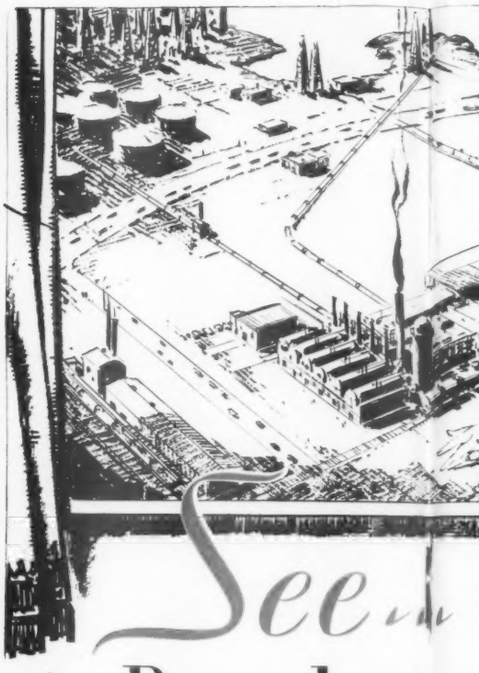
Dated October 3

Forms Close September 23



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GAS JOURNAL, Oct. 3rd and 10th

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Readers of The OIL and GAS JOURNAL are BUYERS —this is the time of year that they study new equipment—make new plans—

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. . . . . the two big show issues . . . . the two issues that everyone keeps as THEY ARE REAL directories of manufacturers of Oil and Gas Producing—Refining—Natural Gasoline Manufacturing—Pipeline and Transportation equipment . . your advertising will reach the greatest number of oil men ever covered by any publication.

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MORE *Speed* LESS FRICTION

(CUSHIONED APPLICATION)

"BJ"

HOPKINS ANTI-FRICTION TOOL JOINTS & COLLARS

Anti-friction cushioned application right at the point where most needed—*on* the Tool Joint and Collar. A Bettis Protector is snapped into the machined groove, *and stays there.*

"BJ"-*Hopkins Anti-friction* Tool Joints and Collars are made to API specifications and guaranteed interchangeable. Their use results in faster drilling and many other savings.

Cutaway section of "BJ" *Hopkins Anti-friction* Tool Joint, showing how Bettis Protector is fitted into recess and is prevented from slipping or being moved up or down. Note thickness of metal at recess which makes the joint stronger at this point than standard drill pipe.

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BYRON JACKSON CO.

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When You See Your Tubing Eaten Away How About Your Casing?

When inferior tubing corrodes, it is usually a warning that, sooner or later, water will trickle through corroded casing walls to cause more grief. Protect yourself from such troubles by using Reading 5-Point Casing and Tubing, made of time-tested, corrosion-resisting Genuine Puddled Wrought Iron.

Long life is puddled into Reading 5-Point Tubing and Casing — filaments of silicious slag, a substance as rust-free as plate glass, guard the pure iron from corrosion. Reading 5-Point Pipe is the only wrought iron pipe double welded — it is insurance against leaky joints, splits, galled threads and crystallization.

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Reading pipe distributed by: Frick-Reid Supply Corp., Bradford Supply Co., Republic Supply Co., Superior Tube Co., Reading Iron Co. of Texas

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GENUINE PUDDLED WROUGHT IRON
READING PIPE
DIAMETERS RANGING FROM ⅛ TO 20 INCHES

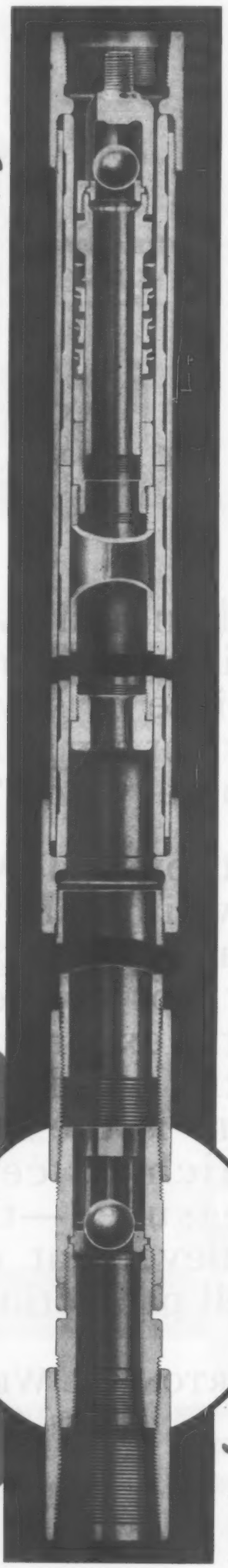
A hundred words might be inscribed on the face of a piece of silverware and yet not say as much as the simple word "Sterling".

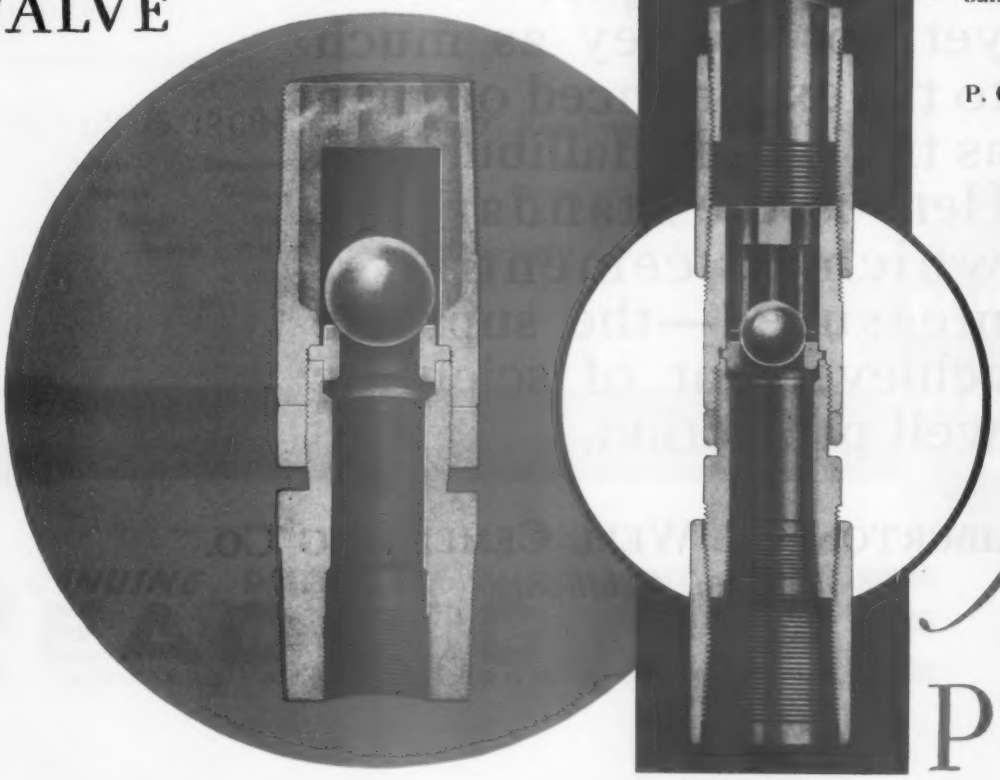
A thousand words might be written about the merits of a cementing service and yet not convey as much to the experienced oil man as the word "Halliburton". Here is the standard by which all cementing is measured—the supreme achievement of scientific well protection.

HALLIBURTON OIL WELL CEMENTING CO.
Duncan, Oklahoma

Another dependable Axelson Valve

Axelson BARREL BOTTOM VALVE





AXELSON Bottom Barrel Valve offers a very desirable pump combination now widely used in many fields.

Both ends of the Barrel Bottom Valve are equipped with regular A.P.I. tubing threads, permitting immediate connection of the upper end of the valve to an Axelson Pump, the lower end to A.P.I. tubing for gas or mud anchor units.

Between the Cage and the Bushing, a lock nut has been provided which securely locks into position the two main portions of the valve, eliminating any possibility of their becoming separated while valve is installed and operating.

The interior of the Cage is equipped with ribs or guides, which serve to keep the ball in vertical travel at all times. This results in a material increase in the life of the seat and ball.

The Seats and Balls in each size valve allow a maximum fluid passage space as the 2″ valve is equipped with 2½″ Seat and Ball, the 2½″ with 3″ and the 3″ with 4″. The Cage has a short opening which further increases the service rendered by the Seat and Ball through the elimination of the pounding or battering effect which would occur if a long Cage were supplied.

Throughout the entire unit the features of strength and rigidity are pronounced; units of the valve being machined from solid bar stock and equipped with long threads to allow tight joints. Strength of design makes breakage or buckling practically impossible, in the event tubing and pump are set on bottom in the pocket cavity of a "shot" hole. This same strength of construction precludes the possibility of the cage wall bulging as the ball travels during pumping operation.

Ask for literature.

Axelson Machine Company

P. O. Box 337, Los Angeles

Tulsa St. Louis

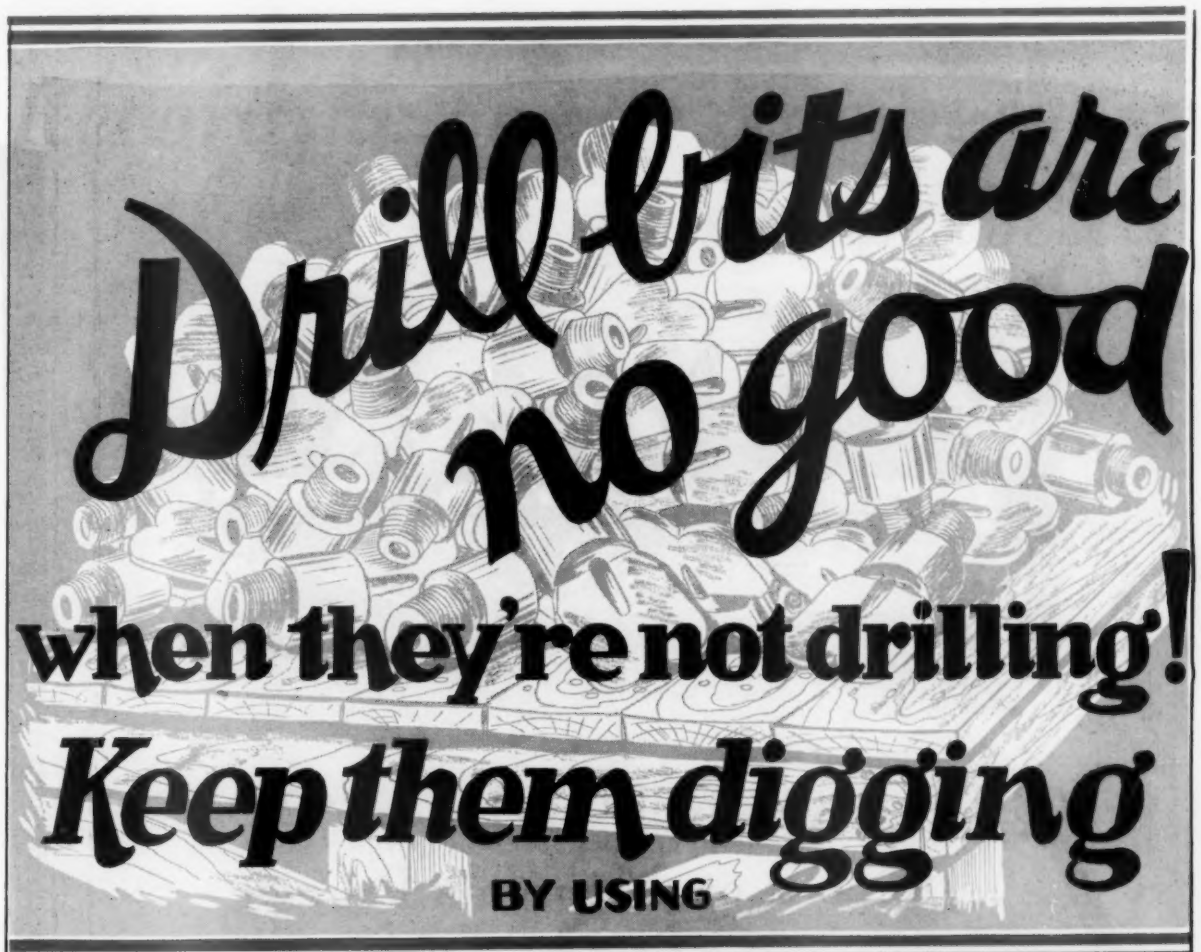
New York City, 30 Church St.

Mid-Continent and Eastern Distributors

Frick-Reid Supply Corporation

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

Axelson PUMPS



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National
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P. O. Box 818
TORRANCE, CALIFORNIA

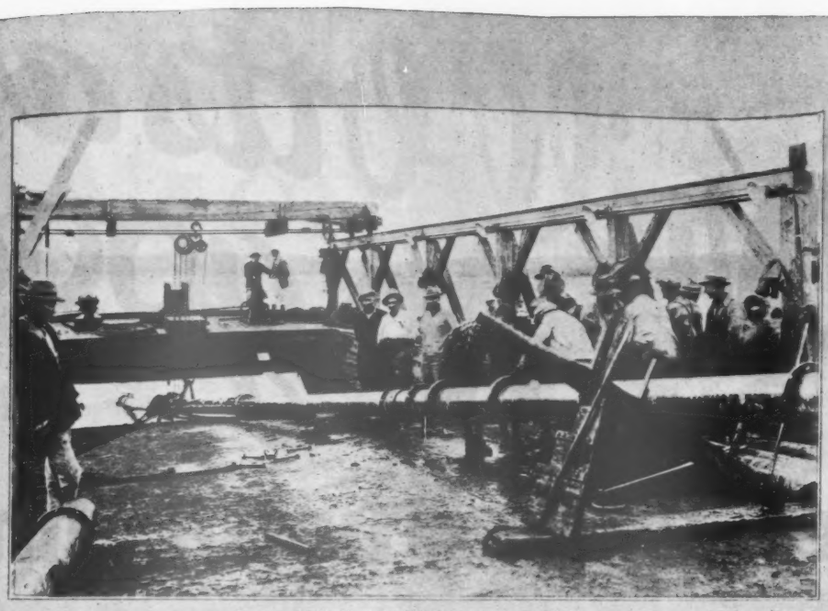
Manufacturers
Hard Set Metals
Oil Field Specialties

Distributors
Welding Rod
Equipment

You can't make hole on the bit rack! . . . Drill bits that are *not faced* with *Drillite* spend more time on the rack than in the hole. . . . The only possible way to judge the value of a bit is by its ability to dig the toughest and hardest of formations! . . . If you want to keep your bits digging, *Specify* Drillite!

DRILLITE IS NOT RAW MINERAL!

Drillite is a *Refined Product* for use wherever there is Abrasion!



Laying water lines at Mississippi river crossing

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STARTING in Louisiana, this 208-mile 18-inch gas line reached Memphis in 92 days. Laying the line involved the crossing of cotton fields, gumbo, swamps, the Mississippi and four other rivers; nine railroads; canals, ditches and bayous—about the full range of experiences that would likely be encountered in laying a pipe line anywhere.

While much credit belongs to the skill of workmen and the wise supervision of the job, still a share may go to an ever-ready and adaptable pipe whose characteristics—more particularly strength, ductility and well-finished ends, meant much in the general success of laying the line.

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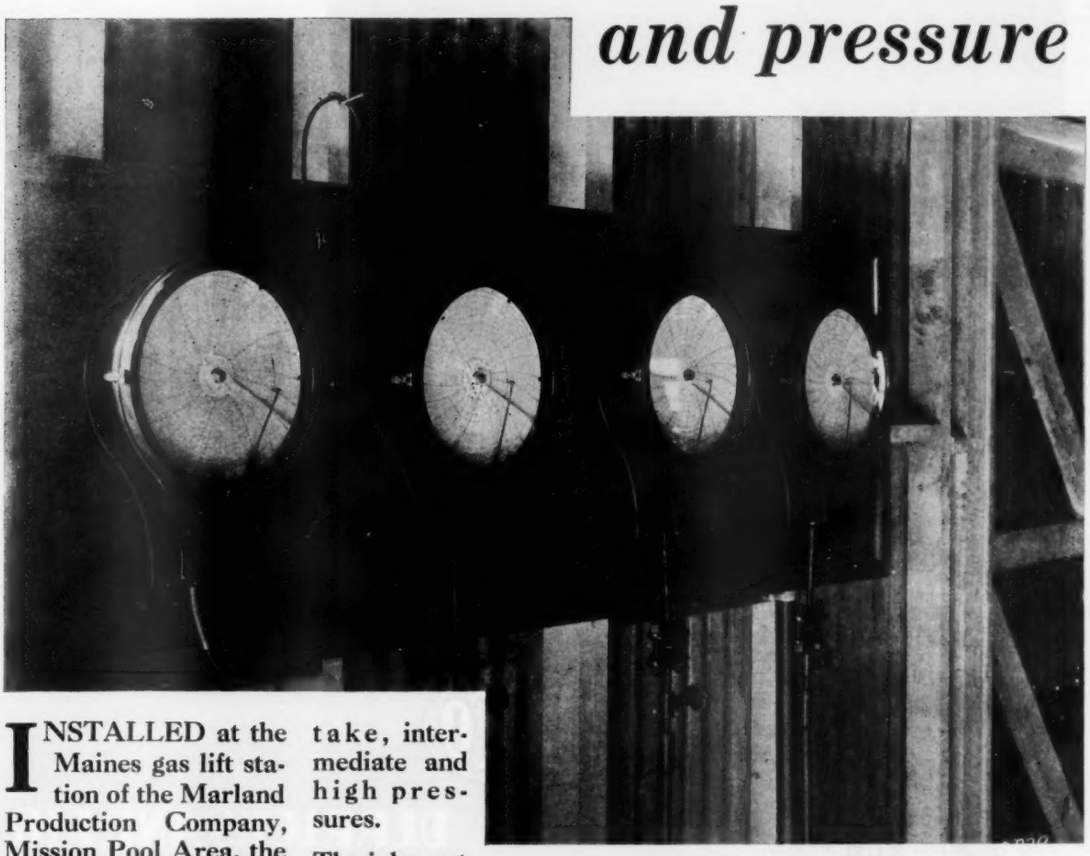
Subsidiary of United States Steel Corporation

NATIONAL PIPE

Recording gas lift temperature and pressure



Continuous chart records of temperature and pressure form a permanent daily "log" of operation.

INSTALLED at the Maines gas lift station of the Marland Production Company, Mission Pool Area, the four *Bristol's Recording Instruments* shown above assist materially in controlling operating conditions.

The installation consists of one thermometer to record temperature of discharge gas, and three Pressure-Vacuum Gauges to record intake, intermediate and high pressures.

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Crude Oil Situation Looks Brighter

Highest daily average estimated total production in 1928, week ended Dec. 29, 2,585,844 bbls. Lowest in 1928, May 19, 2,338,241 bbls.

California, Oklahoma and Texas Operators Take Favorable Action in Fields of Large Potential Production

By James McIntyre

Highest daily average estimated light oil production in 1928, week ended Dec. 29, 2,158,134 bbls. Lowest in 1928, Mar. 3, 1,927,713 bbls.

The upward swing of crude oil production was stayed the past week and a net decrease of 5,271 barrels in average daily output is recorded. Along with this very satisfactory condition comes the news that the facts in regard to the greatly inadequate marketing outlet in the Oklahoma City Pool are to be immediately laid before the Oklahoma Corporation Commission, together with facts concerning the potential production of the field. A statement from the operators' committee says that all operators in the Oklahoma City Field have signified their willingness to not oppose any fair order of the Commission even if it requires a complete shut-in of all oil wells in that field for a period of 30 days and the shutting down of all Oklahoma County drilling wells when they reach the final casing point. On top of this is the knowledge that California's gas conservation law is now technically effective, and while it may take a fortnight to work out details, the production of California already has shown a decline of 12,500 barrels per day from the figure of the week before. In the dangerous Gray County Field in the Texas Panhandle operators are not drilling in new wells because of inadequate marketing facilities.

The initial attempt to eliminate the waste of natural gas in California will be centered in Santa Fe Springs, Long Beach, Ventura Avenue and Seal Beach. State enforcement officers have been assured by practically every major company in those fields that every effort will be made to facilitate early enforcement and some of the operators have been working on a comprehensive plan to handle gas production and distribution.

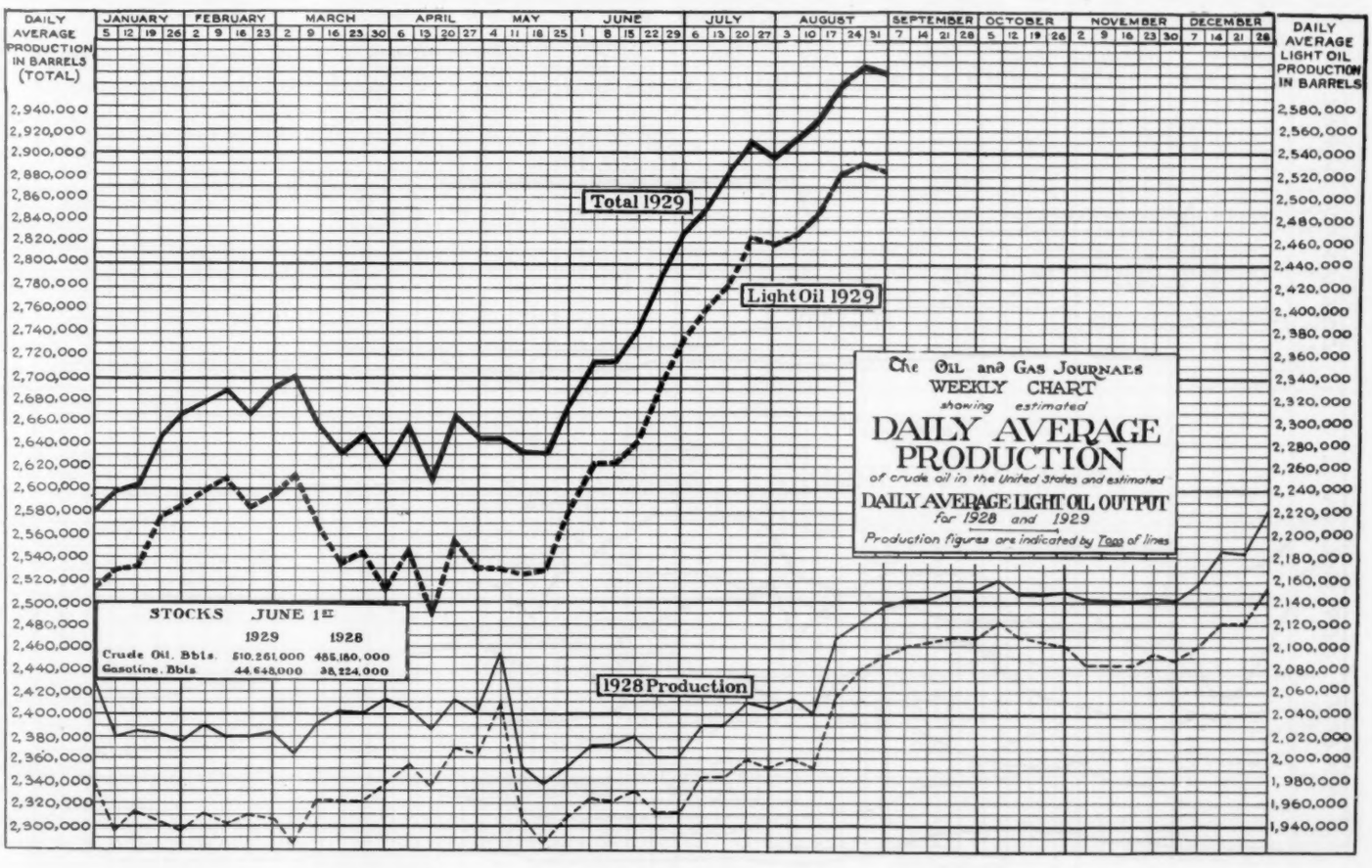
Altogether the situation looks much brighter than in any recent week. Operators are alive to the danger of overproduction and appear to be doing their best to save the situation.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended August 31 and a comparison with the previous week follows:

	August 31		August 24	
	Light	Heavy	Light	Heavy
Oklahoma—				
Oklahoma City	47,615	.....	36,580	.....
St. Louis-Pearson	68,140	.....	71,015	.....
Seminole	303,910	.....	301,410	.....
Northern Miscellaneous	259,215	.....	261,115	.....
Southern Fields	56,435	.....	56,890	.....
Total Oklahoma	735,315	.....	727,010	.....
West Texas—				
Hendricks	129,891	.....	131,000	.....
Yates	131,216	.....	130,465	.....
Remainder	113,883	.....	115,689	.....
Total West Texas	374,990	.....	377,154	.....
North Louisiana	30,095	6,390	29,990	6,450
Arkansas	20,280	45,830	20,580	46,100
North Central Texas	157,511	.....	156,853	.....
Texas Panhandle	135,654	.....	133,624	.....
East Central Texas	18,568	.....	18,744	.....
Kansas	127,920	.....	128,340	.....
Total Mid-Continent Area	1,600,333	52,220	1,592,295	52,550
Gulf Coast	.....	160,690	.....	162,941
Southwest Texas	.....	76,041	.....	74,386
Eastern	127,000	.....	126,000	.....
Rocky Mountain Area	78,880	.....	78,763	.....
California—				
Santa Fe Springs	285,500	.....	295,500	.....
Long Beach	169,500	.....	170,000	.....
Huntington Beach	43,500	.....	43,000	.....
Elwood	20,000	.....	22,500	.....
Ventura	61,500	.....	61,000	.....
Seal Beach	44,000	.....	45,500	.....
Remainder of State	98,000	153,000	98,000	153,000
Total California	722,000	153,000	735,500	153,000
Total United States	2,528,213	441,951	2,532,558	442,877
Grand total		2,970,164		2,975,435

→ **Total Decrease, 5,271 Bbls.; Light Oil Decrease, 4,345 Bbls.** ←



Oklahoma Fuel Oil Market Advances

All Grades Including Gas Oils and Distillates in Strong Demand. Refinery Gasoline and Natural Gasoline Less Active

By C. O. Willson

Continued strength in all products used as fuels with a weakening price trend in gasolines characterized the market trend in Oklahoma (Group 3) on Monday and Tuesday.

In the remaining products the movement of kerosene had slowed up somewhat but prices in Oklahoma continued firm. Bright stocks were firm in price with price concessions reported in steam refined stocks. Refiners with little spot buying have advanced their price on the 124-126 grade of wax to a low of 2¾ cents.

The price strength in fuel oil is creating wide discussion in the trade. The higher gravities have been strong for several weeks and this week the advance spread to the lower gravities. The only exception to this general advance are the grades which due to the presence of free carbon or exceptionally high cold test can hardly be considered commercial grades.

Some of the fuel oil buyers who have had no faith in the strength displayed by fuel oils are being forced to change their attitude. These buyers felt that the higher prices were unjustified and were confident that they would be able to buy for their September requirements at prices which prevailed early in the summer. They have found, however, that the offerings have been small with higher quotations the rule. In a few cases the industrial buyers have been compelled to purchase regardless of price although there is still an apparent reluctance to accept the sellers' prices in a market which has been dominated by the buyers over the greater part of the past two years.

The foregoing applies to gas oil and furnace distillates as well as fuel oil although interest in the market has centered in the lower gravity fuel oils over the past few days. The few refiners offering high gravity fuel oils, distillates and gas oil on the spot market are asking prices which reflect the general attitude of optimism regarding the fuel market. Sales of the best grades of gas oil at 3 cents and distillates at 4 cents are reported with the low of the market one-half cent under these quotations. Many buyers are confident that more furnace oil material will be available later in the month although no price reaction is anticipated.

REFINED MARKET BAROMETER

A lowering of gasoline tank car prices along the East Coast for domestic movement by the major refineries spread to adjoining areas and tended to weaken the market generally. The drastic reduction in New York City tank wagon and service station prices also aided in creating a feeling of uncertainty relative to the immediate future of the gasoline market for both domestic and export movement. In the Middle West and Mid-Continent some price cutting in gasoline developed, although the larger refiners are quoting the same prices as in August. Natural gasolines were reactionary in the Mid-Continent with no changes reported on the West Coast. Kerosene prices advanced in the domestic market both in Pennsylvania and the East Coast with firm prices in other areas. Fuel oil, including furnace oil and gas oil, continues to show an upward trend at interior points with no change in coastal prices. Cylinder oils again weakened on the East Coast, although prices strengthened on some grades in Pennsylvania. Bright stocks at other points were generally strong. Petroleum wax prices strengthened at eastern refineries.

Mid-Continent—Fuel oil prices strengthened in Oklahoma and Kansas with a firm market situation in other areas. Distillates and gas oils firm. Kerosene prices firm. Refinery gasolines weak. Natural gasoline prices reduced with slow demand. Lubricating oil prices with exception of steam refined stock firm. Quoted paraffin wax prices higher.

East Coast—Reduction of 1 cent in U. S. Motor gasoline prices by largest refiner and 3-cent reduction in gasoline tank wagon and service station prices in part of New York City reflects market weakness. Kerosene prices higher for domestic movement. Cylinder oils weaker. Paraffin wax market stronger. No changes in fuel oil, gas oil and Diesel oil prices. Very little trading in bulk gasoline market for export movement.

Pennsylvania—Kerosene prices advanced. Several grades of steam refined stocks also higher. Good movement of gasoline with no important price changes.

Chicago—Heavy consumption of gasoline over week-end. Larger refiners still quoting August prices for spot gasoline movement. Price concessions obtainable from other refiners. Kerosene active and prices firm. Strong demand for fuel oil, distillates and gas oil.

Gulf Coast—Neutral oil prices steady. No change in gasoline. Fuel oil prices unchanged although spot movement slow due to high tanker rates.

Future Program

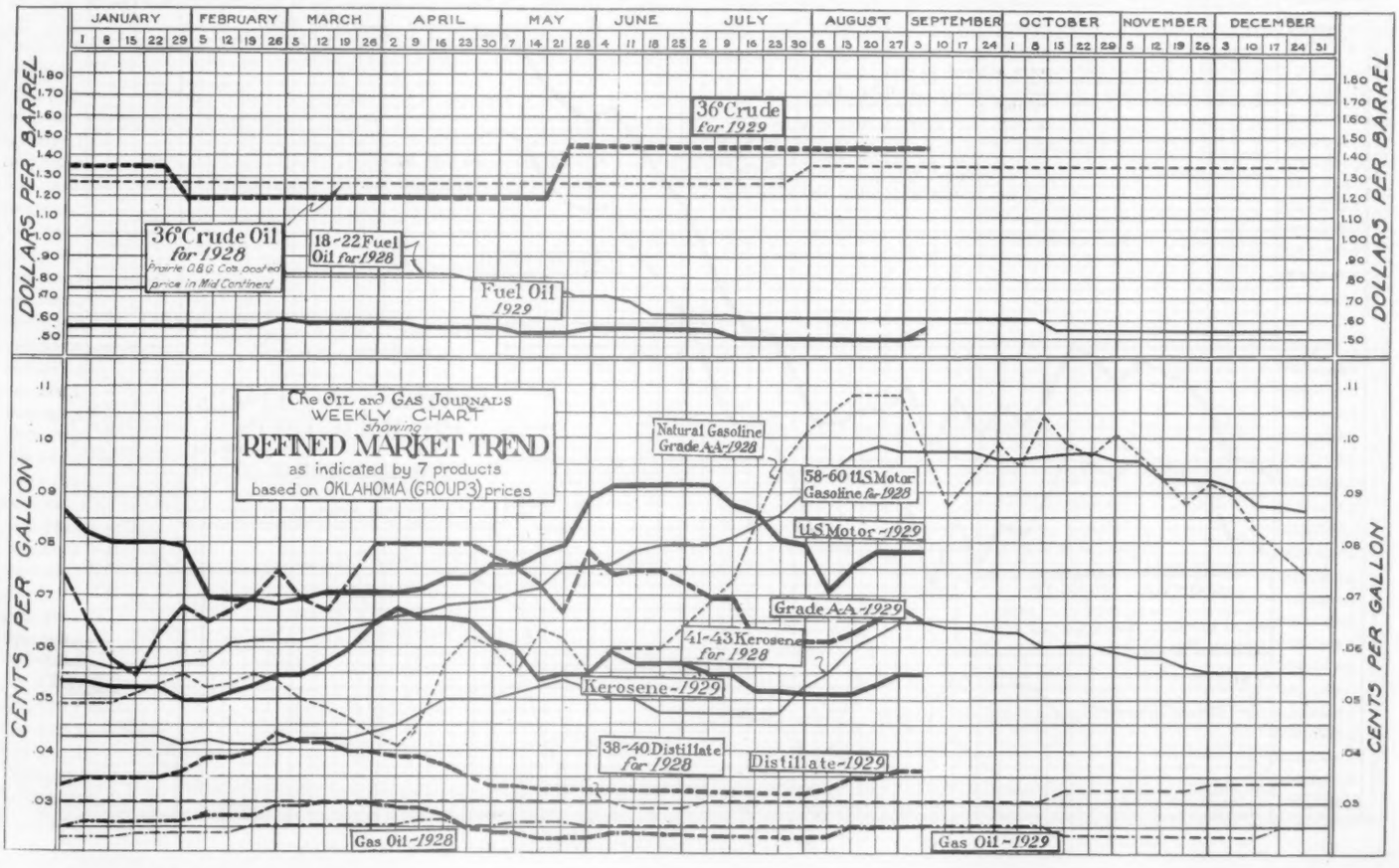
In connection with the advance in all fuel prices it is known that a number of refinery operators in the Mid-Continent Field expect to expand cracking operations at their refineries over the remainder of the year. Independent refiners who buy their crude oil supplies feel that the posted crude oil schedules are too high and it is imperative that they adjust their operations so as to reduce their crude oil runs as much as possible. As motor fuel consumption declines they expect to reduce their crude oil runs to stills but continue to operate their cracking plants at capacity. Several refiners have outlined this plan to buyers in explanation of the fact that they would have little or no high gravity fuel oil and gas oil to offer over the remainder of the year.

Cracking facilities in the Mid-Continent have expanded to the point where the output of refineries without cracking facilities has become negligible. If this plan of stressing the cracking operation at the expense of the skimming operation becomes general there is little doubt that the abnormal spread between crude oil and fuel oil prices will be narrowed either through a reduction in the former or a continued advance in the latter.

Gasolines Unsettled

With the first three days of the month passed the September outlook for refinery gasolines and natural gasolines is uncertain. Prices were reactionary the last few days of August and this trend was

(Continued on Page 151)



Some Uses of Oil and Gas Separators

Proper Methods of Setting and Making Connections Explained and Illustrated. Designs and Capacities Discussed

By Charles L. Shirley
Mechanical Engineer, Shell Petroleum Corp.*

The evolution of the modern high-pressure gas trap or separator from the lease flow tank was the natural sequence following gasoline plant development. As the lighter fractions of petroleum increased in commercial value, the economics of lease development required that all portions of the oil-gas mixture that were not utilized by the natural gasoline plant, be delivered as a stable liquid to the lease stock tanks.

Gas of constant pressure and volume and without contaminating oils was to be delivered to the gasoline plant. A clean, uncut oil free from wild gases was to flow without mechanical aid into the stock tanks. Methods of handling cut oil, water, sand, paraffins, etc., were to be developed.

At the present time more than a dozen different makes of traps are available for purchase in the Mid-Continent area. However, approximately six manufacturers control the bulk of the separator business in the world.

The early gas traps consisted of a vertical tank, a liquid level control operating a balanced valve, a cleanout plate and a splash baffle. The gas outlet was near the top of the tank, the oil inlet about the center, the oil outlet some two feet from the bottom.

Design Little Changed

In essentials the outside design of the gas separator has changed but little. Where field conditions vary an attempt has been made to develop a trap to meet the local requirements. Some slight changes in the standard designs have been made. For instance, the trade in the Texas Panhandle was furnished with a steam coil to insert in the bottom of the vessel, near the oil outlet and some of them have steam coils around and through the scrubbing baffles, and, in most instances, steam heated floats and oil valves are used. It is sometimes possible to use steam heated oil valves when high pressure gasoline or fresh water are handled. A separate liquid level control has been used to automatically drain water from the bottom of the tank. Jets have been used to remove sand and settled sediments.

The complexity of the action of separation has allowed trap manufacturers to use ingenious internal designs and valve control systems to accomplish the same nominal result.

However, due to the extremely variable starting conditions, the operations and results of separation are different. The operation of gravitational separation may be explained in simple terms in the following manner: Gas being lighter than air will rise in the air (flow against an atmospheric or zero gauge back pressure) the liquid oil being heavier rests at a lower level. In the same manner the water and sedimentary sand come to rest at individual levels.

This could be accomplished in a large open tank or earthen pit, except; the gas is generally saved, the oil is to be retained at its highest gravity, the fire hazard must be eliminated and waste, both as to material and investment, minimized.

The result has been the manufacturing of several sizes of closed, gas tight, welded or riveted steel cylinders in sizes ranging from 7 feet diameter by 24 feet length to 30 inches diameter by 6 feet length. It is obvious that great care must be taken in order that the separator (trap) of greatest efficiency and usefulness can be selected for its proper work.

Much Gas Absorbed

In wells yielding large volumes of gas and oil, the fluid mixture reaches the casinghead or trap inlet in much the same condition that existed at face of the productive zone. Wells of small volumes and irregular flowing periods probably have had a gravitational separation taking place even before reaching the sand face of the reservoir rock and very little separation is necessary when the surface is reached.

The average paraffin base oil will dissolve some 200 cubic feet of natural gas at 1,000 pounds pressure and normal temperatures. This means that if the gas were allowed to expand at the trap from 1,000 pounds pressure an increase in volume of 28 times would occur. This in turn would lower the viscosity of the oil a very appreciable amount, causing difficulty in its movements away from the separator. The specific heat of the gas would upon expansion lower the temperature of the oil and the trap. This would recondense some gas, raising the temperature.

Under actual conditions, however, much of this expansion takes place while the fluid is coming up the pipe. The gas in this case may by-pass, causing the oil to head and come in slugs. If this slug is of large volume and moves with a high velocity, it will overload the separating capacity of most traps.

Conditions can be continually cited under which a normally satisfactory trap will fail to function. The physical-chemical laws under which a liquid mixture of various hydrocarbon moleculars of different characteristics may lose its single homogeneous equilibrium, and come to rest under normal conditions as a multiplicity of stable homogeneous mixtures are complex. For this reason a perfect trap cannot be designed as too many variables exist, both as to the nature of the operating conditions and the oil itself.

The compressible nature of the gas determines the capacity of any separator. Almost always the oil flow can be cared for by the ordinary trap. The amount of oil flowing is determined by the following positive factors:

1. Trap location.
2. Fittings used.
3. Size and length of lead lines.
4. Pressure on trap.
5. Normal viscosity of oil.

We will disregard the disposal of oil except to state that except for wells of extremely low oil volume the lead line from the oil outlet should equal in cross-sectional area the fluid inlet. This will minimize the danger of "pukeing" or carry-over of the lower fractions.

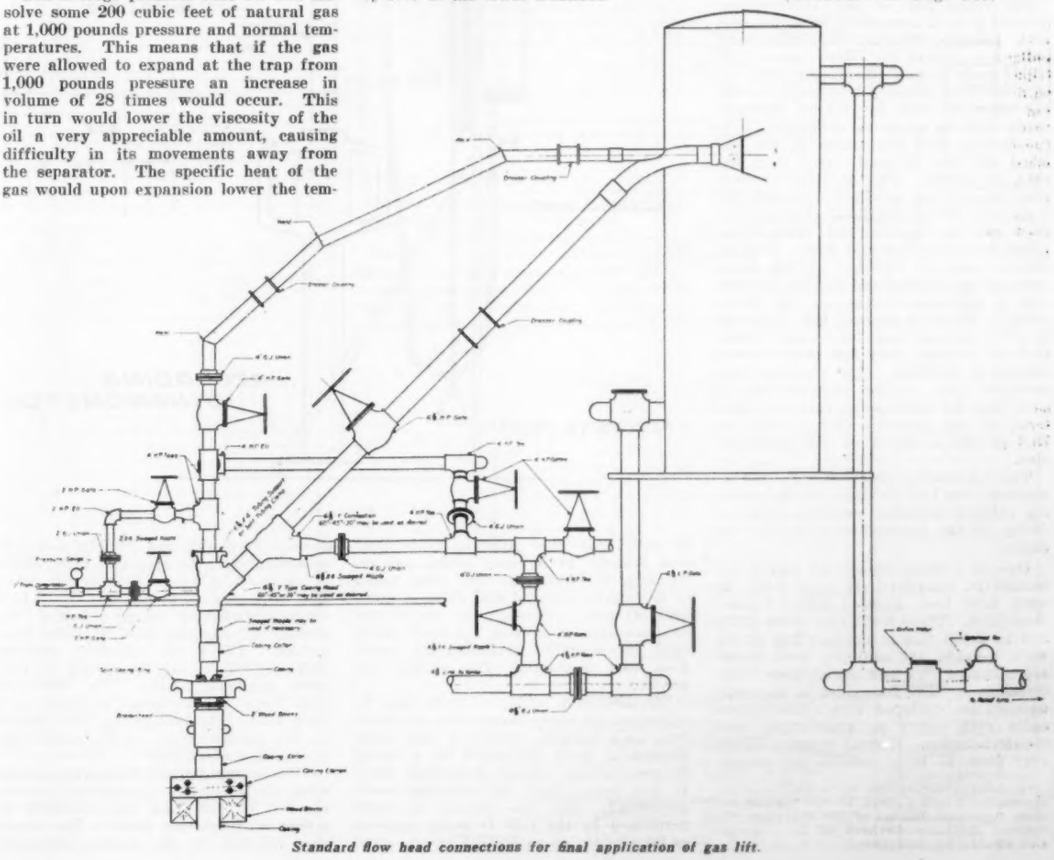
Until actual and similar field conditions prove the contrary, the trap manufacturers' oil capacity rating should be considered as correct. Any type of tank will allow the oil to flow through it, the fittings being the greatest factor in retarding oil flow. There is some question of opinion as to the efficiency of the slide and rotary valves used in California and the type of balance valve used in the Mid-Continent. In California a large inside float is popular. Very little baffling is observed in the popular California type. Baffling in a certain popular Mid-Continent trap is quite complex, both centrifugal baffling and mist extraction baffling being employed. One recent trap is equipped with a mist extractor which has been used successfully in gasoline absorption towers.

The majority of traps used in high gravity fields attempt to use the separating principle of centrifugal action. If the entering velocity of the oil-gas mixture is sufficient to give this rotative action to the fluid or oil it will travel toward the outside and down while the gas will move to the center and up. One design of trap uses a series of expansion chambers in conjunction with a rotative movement of the gas, and impinging surfaces for collecting the mist.

The gas throughput and oil throughput can be readily calculated for any separating system. It is a function the five-halves power of the average minor axis of the smallest cross-sectional area in the system. However, the velocity of the gas must be below the critical point at which speed it will carry entrained oil.

The efficiency of separation depends

(Continued on Page 147)



Standard flow head connections for final application of gas lift.

*This is the fourth of a series of articles on crude oil production. The first was published in the August 15 issue of The Oil and Gas Journal.

ENGINEERS' PAPERS READ AT GALVESTON

Full reports of the papers read at the Galveston, Tex., meeting of the Texas-Louisiana-Arkansas Division, American Petroleum Institute Division of Development and Production Engineering, will be found in this issue of The Oil and Gas Journal as follows:

"Weighing and Counterbalancing Wells," by W. C. Shutts and B. L. Moore, page 38-39.

"Standardization of Electric Power Rate Structure for Drilling and Production," by E. Stanley Durward, page 41.

"Proper Care of Sucker Rods," by R. H. Reese and by E.Stanley Durward, page 74.

"Metallurgy of Hard-Faced Rotary Bits," by W. A. Wissler and C. W. Metzger, Page 75.

"Methods of Salt Water Disposal," by S. W. Oberg, page 76.

Causes of Sucker Rod Trouble Sought

Experiments Made to Ascertain the Effects of Counterbalancing Wells and the Overall Efficiency of Pumping Equipment

By W. C. Shutts[1] and B. L. Moore[2]
Petroleum Engineer,[1] Electrical Engineer,[2] Humble Oil & Refining Co.*

This paper gives the results of experiments made in order to determine the cause of sucker rod trouble, the effects of counterbalancing, and the overall power efficiency of pumping equipment. The weighing of wells has played an important part in this analysis. A recording dynamometer is described which was used to obtain indicator cards showing the weight on the polished rod and its travel. These cards, together with power readings taken at the motor, made it possible to determine the most efficient pumping motion, the effective length of plunger stroke, correct weight of counterbalance, effects of counterbalancing and the vibratory stresses that are set up in a string of rods by an irregular pumping motion. From this information, an increased operating efficiency can be obtained by making change in method of operation or size and type of equipment.

Recording Dynamometer

A recording dynamometer was constructed as illustrated in Figure 1. This dynamometer was designed by C. V. Temple, petroleum engineer, West Texas division, Humble Oil & Refining Co. The dynamometer is of the hydraulic type and requires no special beam hanger or disturbance of the regular well hookup. To install it, the dynamometer is slipped down over the polished rod until it rests upon the regular polished rod carrier. A polished rod clamp is then installed on top of the instrument and the full weight of the rods is allowed to rest upon the dynamometer. The weight of the rods is carried by four pins which act upon a diaphragm, imparting the load to fluid above. The pressure of the fluid is transmitted by means of a flexible hose to the recording pressure gauge.

The major part of the recording apparatus is a 12-inch static recording case with pressure element, two light wood pulleys to revolve the chart, and a light tripod made of one-half inch pipe that can be dismantled easily. A pressure recording chart is used for taking indicator cards, and the revolving mechanism is so constructed that any travel of the polished rod can be read direct from the card in inches. The pressure of each part of pumping stroke is recorded and a circular card is obtained. The circular card can be replotted on cross-section paper for office files and study. The indicator chart is actuated by the movement of the polished rod on the upstroke, and a reversing weight on the downstroke. When so desired, the chart can be set to retrace itself for several strokes and an average card for these several strokes is obtained. The working cross sectional area of the dynamometer is such that for each pound pressure registered on the indicator chart, a load of 25.8 pounds is acting on the dynamometer.

The information obtained with this instrument has been indispensable in analyzing existing pumping conditions and arriving at the conclusions given in this paper.

Due to a large amount of sucker rod trouble in comparatively easy wells, 40 wells have been weighed under various conditions. These wells vary from 2,250 feet to 2,700 feet in depth. Ten of the wells weighed are equipped with standard pumping rigs and grasshopper counterbalances. The remainder of the wells weighed are equipped with reducton-gear units with rotary or grasshopper type counterbalances. Normal pumping speeds vary from 17 to 31 strokes per minute. Tests were made at pumping speeds ranging from 14 to 34 strokes per minute. Gas engines and electric motors are used as prime movers. Indicator cards have been plotted for representative wells to show existing puming conditions as determined by the dynamometer.

Evaluating Sucker Rod Service

The present system of evaluating sucker rod service on the number of days run, or barrels of fluid lifted, has proven inadequate in that in a number of cases rods operating in supposedly easy wells have given very poor service, while the same make of rods operating in supposedly hard wells have given no trouble. Rods have been condemned and junked for failure to give satisfactory service in wells that were pumping little fluid and thought to be easy wells, but on weighing the wells the rods were found to be heavily stressed and doing a great deal of work. Through the use of the dynamometer, a method has been developed for actually measuring the work done and evaluating the sucker rod service.

The life of a string of rods may be influenced by many factors and to calculate with complete accuracy the exact amount of work performed by a string of rods is an almost impossible task. It has been found, by weighing wells periodically, that the amount of work performed by the rods is fairly uniform as long as the operating conditions—such as length of stroke, strokes per minute, and type and size of equipment—remains constant. By weighing wells periodically a constant check may be kept of the pumping motion and the sucker rod service obtained by the following formula:

Ton mile service =

$$\frac{(UL+DL)\ N\times L\times 1{,}440\times S}{5{,}280\times 2{,}000} \qquad \text{(Formula 1)}$$

Where UL = Up stroke load.
DL = Down stroke load.
N = Number strokes per minute.
L = Length of stroke (feet.)
S = Days service.

Causes of Sucker Rod Failure

The well illustrated in Figure 2 was given considerable rod trouble, a failure occurring every four or five days, either in the body of the rod or in the joint. The well was pumping with a 51-inch stroke. Indicator cards showed the plunger to be hitting fluid 10 inches from bottom. (Note the vibratory stresses that are set up in the string of rods when pounding fluid.) The well was shut down for an hour to build up a fluid head. The plunger hit fluid higher up but pumped down to 10 inches from bottom in a short time.

Various experiments were tried in lowering and raising the plunger in the barrel, but in each case approximately 10 inches of fluid was lifted. The stroke was reduced to 31 inches, with the plunger hitting fluid at the same position. A large decrease in power consumption, with a corresponding decrease in horsepower at the polished rod and work performed by the sucker rods, was effected, with no loss in effective stroke or production. The decrease in power is not in proportion to the decrease in load at the polished rod, and a lower over-all power efficiency is obtained at the lighter loads.

Previous to changing the stroke at this well there had been 14 rod failures in 72 days, or one failure every five days. In 88 days' service since weighing the well, there have been six failures, or one failure every 15 days. This well is pumping at 25 strokes per minute with a constant speed motor. It is believed that slowing the pumping motion down to 18 strokes per minute, and lengthening the stroke to take care of the production, should give a very smooth pumping motion and practically eliminate the sucker rod failures.

Number of Failures Reduced

Several of the heaviest wells weighed, and those causing the most rod failures, are wells making from 100 bbls. to 200 bbls. of fluid and pounding fluid anywhere from 7 inches to 20 inches from bottom. By weighing these wells, the exact length of effective stroke was determined and the pumping motion regulated accordingly. Sucker rod failures have been reduced to one or two a month where, previous to weighing, a failure was occurring every few days. Power consumption at the motor has been reduced 25 to 50 per cent.

Figure 3 shows cards taken on a well pumped at comparatively high pumping speeds. Card "A" was taken at normal pumping speed of 31 strokes per minute and Card "B" was taken at 34 strokes per minute. Note the high maximum and low minimum loads, with a whip or jerk occurring at each end of the stroke. From a study of indicator cards taken, and curves plotted on plunger travel as against polished rod travel, an analysis of Card "A," Figure 3, is as follows:

The rods are picked up at the bottom of the stroke at point "A." From point "A" to point "B" the polished rod travels upward with a sharp increase in load, absorbing rod stretch and accelerating the fluid load.

From point "B" to point "C" the plunger travel is approximately the same as the polished rod travel. The high peak load occurring at point "D" is resultant impact load and accelerated fluid column load. During this period the plunger travel is a great deal less than the polished rod travel, due to rod stretch.

Deceleration Occurs

From point "D" to point "E" a deceleration of the rods takes place with a decrease in load. Due to this decrease in load the rods are contracting and the plunger travels upward with a much higher velocity than the polished rod.

At point "E" the plunger has decelerated to the same velocity as the polished rod and the two travel together through a fraction of the stroke.

From point "F" through point "G," at the top of the polished rod stroke, to point "H" the plunger is lagging behind the polished rod, resulting in an increase in load.

At point "F" the plunger reaches its maximum upward travel slightly ahead of the polished rod. From point "F" to point "G" the plunger travels downward slightly while the polished rod is still traveling upward.

The increased load from point "G" to point "H" causes the rods to stretch at the same time the polished rod is trav-

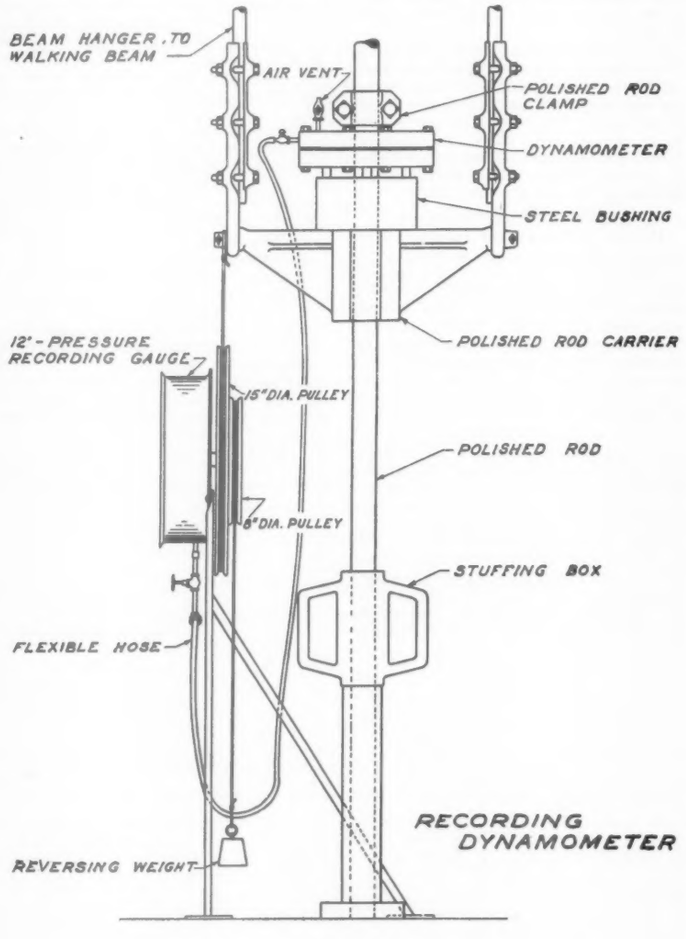


Figure 1.

*Presented before the Galveston meeting, September 5 and 6, 1929, of the Texas-Louisiana-Arkansas district of the American Petroleum Institute, Division of Development and Production Engineer.

eling downward and the movement of the plunger is greater than the polished rod.

From point "H" to point "K" a downward acceleration of the rods takes place.

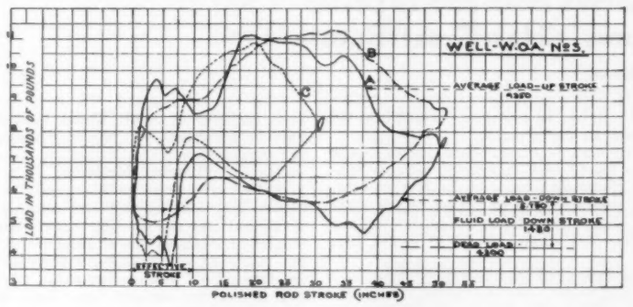


FIG. 2

EFFECT OF POUNDING FLUID

	LENGTH STROKE	STROKES PER MIN.	H-P AT MOTOR	H-P AT POL. ROD	ROD T.M. SERVICE PER DAY	REMARKS
CARD A	51"	24.1	14.1	11.1	211	POUNDING FLUID 10' FROM BOTTOM
CARD B	51"	24.1		11.2	222	WELL RESTED 1 HOUR
CARD C	51"	25	12.9	9.3	139	PUMPED DOWN ON 51" STROKE

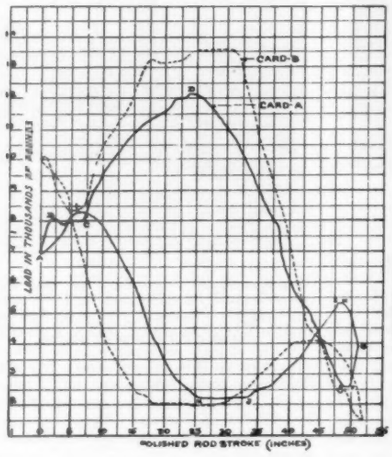
REDUCTION GEAR UNIT—ROTARY COUNTERBALANCE - PUMPING DEPTH-2625-FT. ¾" RODS. APPROXIMATELY 800-BBLS. FLUID PER DAY

At point "H" the polished rod velocity becomes equal to the plunger velocity and the travel of the two is equal.

From point "I" to point "J" the rods are accelerated downward with a decreasing load. The rods contract and the plunger travel is less than the polished rod travel. At point "J" the polished rod starts decelerating and the velocity and travel of the plunger becomes equal to that of the polished rod.

From point "K" to point "L" the rods are decelerated, causing an increase in load. This increase in load causes the rods to stretch on the down stroke, which, added to the polished rod travel, causes a greater plunger than polished rod movement.

At point "L" the plunger velocity becomes less than the polished rod velocity and a decrease in load results to point "A" at the bottom of the stroke.



WELL W.M.S-3.

FIG. 3.

EFFECT OF HIGH PUMPING SPEED

CARD	LENGTH OF STROKE	STROKES PER MIN.	H.P. AT MOTOR	H.P. AT POL. ROD	ROD T.M. PER DAY	REMARKS
A	51	31	20.1	16.9	234	NORMAL PUMPING.
B	52	34	30.3	25.6	276	INCREASED SPEED

REDUCTION GEAR UNIT
ROTARY COUNTER-BALANCE
PUMPING DEPTH 2685 FT.
2½ TUBING - ¾ RODS.

The indicator card on this well indicates a much greater plunger movement than polished rod movement. A study of all indicator cards obtained suggests the possibility of the existence of a critical speed at which a pumping well might be operated and a more efficient plunger movement obtained than at either an immediately higher or lower speed.

Slower Pumping Speeds

Cards taken at slower pumping speeds show a decreased maximum load and an increased minimum load, with peak loads occurring at about the same position in the stroke. Less differential in rod stress will increase sucker rod life and more efficient counterbalancing can be obtained. The cards show that, with a pumping stroke ranging from 52 inches to 72 inches, the peak load occurs at approximately 45 degrees to 80 degrees of the crank travel, on the up stroke of the rods, but as this stroke is decreased to 24 or 32 inches at the same pumping speed, the peak load occurs near the top of the stroke.

With the peak load occurring near the

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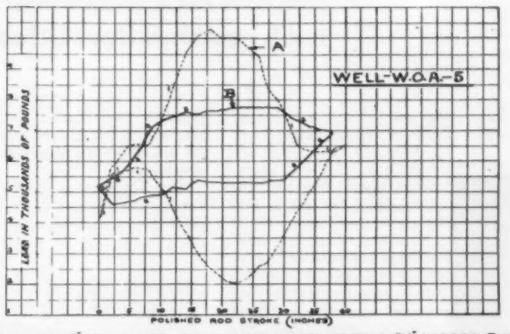
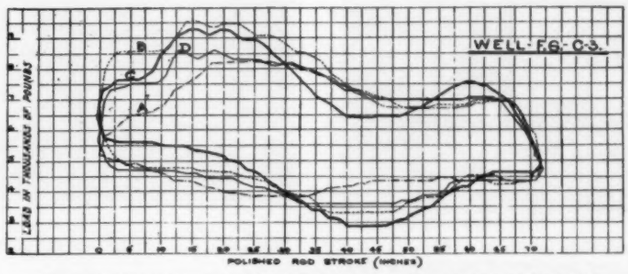


COMPARISON OF 2½ STANDARD WORKING BARREL, WITH A 2½ INSERT PUMP

CARD A	2½ STANDARD BARREL -	POL. ROD H-P = 7.76
CARD B	2½ INSERT PUMP	POL. ROD H-P = 3.67

REDUCTION GEAR UNIT - ROTARY COUNTERBALANCE
PUMPING DEPTH 2550 FT. - 2½ TUBING - ¾ RODS
APPROXIMATELY 255 BBLS. FLUID PER DAY - 21 STROKES PER M.

FIG. 5

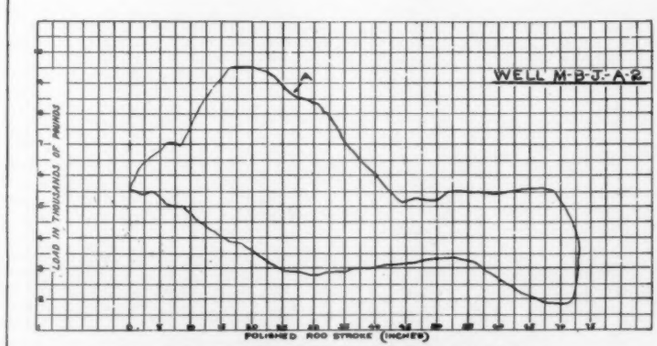


EFFECT OF AMOUNT AND POSITION OF COUNTERBALANCE

CARD	LENGTH STROKE	STROKES PER MIN.	H-P AT MOTOR	H-P AT POL. ROD	REMARKS
A	78"	21"	16.67	10.65	4700 LBS COUNTERBALANCE WITH CRANK
B	78"	21"	19.43	13.93	4700 " " LEADING CRANK 15°
C	78"	21"	19.68	15.1	4700 " " LAGGING " 15°
D	78"	21"	17.96	12.1	4400 " COUNTERBALANCE WITH CRANK
					5700 " CALCULATED CORRECT C-B.

REDUCTION GEAR UNIT - ROTARY COUNTERBALANCE
PUMPING DEPTH 2675 FT. - 2½ TUBING - ¾ RODS.

FIG. 6

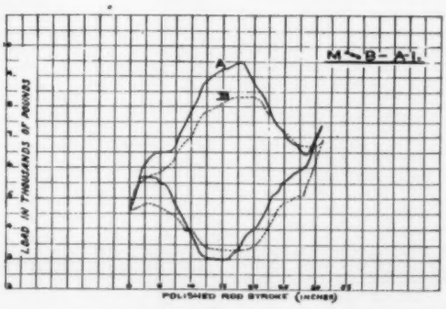


WELL WITH COMPARATIVELY SMOOTH PUMPING MOTION

CARD	LENGTH STROKE	STROKES PER MIN.	H-P AT MOTOR	H-P AT POL. ROD	ROD T.M. SERVICE PER DAY	REMARKS
A	73"	21		12.8	102	NO ROD FAILURES

REDUCTION GEAR UNIT - ROTARY COUNTERBALANCE
PUMPING DEPTH 2650 FT. - 2½ TUBING - ¾ RODS
APPROXIMATELY 800 BBLS. FLUID PER DAY

FIG. 4.



EFFECTS OF COUNTERBALANCING.

CARD	LENGTH STROKE	STROKES PER MIN.	H-P AT MOTOR	H-P AT POL. ROD	REMARKS
A	31"	21"	7.98	4.49	6400 LBS. COUNTERBALANCE
B	31"	21"	7.98	4.36	5600 " "
					5700 " CALCULATED CORRECT W.T.

REDUCTION GEAR UNIT - ROTARY COUNTERBALANCE
PUMPING DEPTH 2680 FT. - 2½ TUBING - ¾ RODS.

FIG. 7

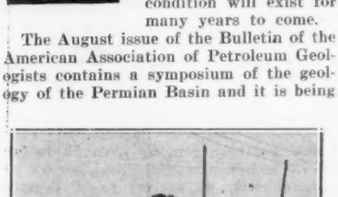
Deepest and Shallowest Oil Sands

West Texas Permian Basin Area Has Both and Is Distinguished for Other Novel Features. Has Great Future

By L. G. E. Bignell
Petroleum Engineering Editor

For some time past the oil fields of the Permian Basin of West Texas have been in the spotlight because of their potential production and the depth of the wells, and while the novelty of this area has to some extent worn away there are still many problems of interest to the oil man and the engineer and it seems that this condition will exist for many years to come.

The August issue of the Bulletin of the American Association of Petroleum Geologists contains a symposium of the geology of the Permian Basin and it is being read and studied by all concerned and outlines many very interesting theories as to the type of formations found in this area.



Shallow well on Continental Oil Co. property near the Pecos River in Yates Pool, pumping with electric motor. Well is about 20 feet deep.

One school of geology seems to hold to the theory of reef formation and a reworking of these reefs, making them porous and suitable for the accumulation of oil and gas that is now being produced.

Others do not agree with this theory for they seem to think that sufficient evidence to substantiate it has not been developed. But all seem to agree that the potential possibilities of the area are immense and but a very small portion of the oil bearing formations have as yet been discovered.

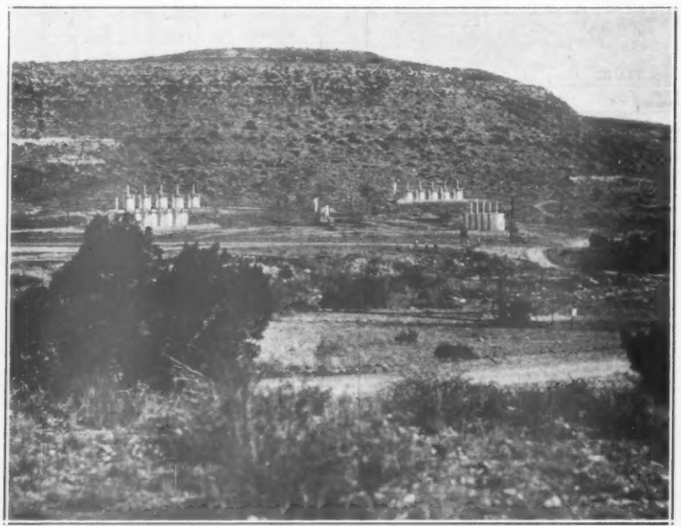
The University of Texas is naturally very much interested in this area for 2,250,000 acres of land have been set aside for it and this is scattered through 17 counties located in that territory west of a north and south line drawn through San Angelo and Sweetwater and extending to the Rio Grande.

The Texas legislature enacted a new law on January 8, 1929, creating a land board that is to consist of two regents of the University of Texas and the commissioner of the General Land office, who are to have charge of the leasing of lands owned by the University.

The law became effective immediately upon receiving the signature of the Governor and on June 1, 1929, offices were established in San Angelo, in charge of Dr. H. P. Bybee as geologist, with Frank P. Friend as surveyor.

The land is divided into six or seven large tracts each embracing several hundred thousand acres and the law provides that the land shall be leased to the highest responsible bidder in blocks of one section only, upon receipt of sealed bids accompanied by certified checks and agreement to pay the royalty of one-eighth of the gross production. Separate bids must be made if more than one section is desired and the land is valued in some sections as high as $1,500 per acre. The minimum lease charge is 10 cents per acre.

These leases will exclude potash and other mineral rights and cover oil and gas only. It is proposed that samples of all wells as drilled shall be filed with the field office and it is intended that such samples shall be analyzed for potash and other rare elements. It is stated that some samples of West Texas formation have been secured that ran as high as 40 per cent potash.

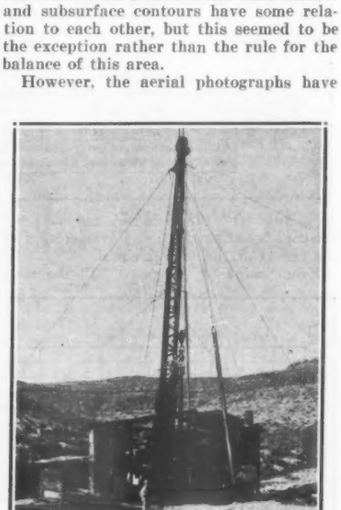


Mid-Kansas Oil & Gas Co.'s group of shallow wells about 1,000 feet west of Pecos River. One well produced from about 80 feet for a short time, and the other was a dry hole at 90 feet.

Mapping Methods

It has been found that mapping this area is best done by the older methods, as aerial photography of the region east of the Pecos River is not of much value for the study of subsurface structures. In the Yates Pool it was found that surface and subsurface contours have some relation to each other, but this seemed to be the exception rather than the rule for the balance of this area.

However, the aerial photographs have their uses in this, as well as in any other fields, for they make very clear pictures of the topography of the ground that can be used for the location of pipe lines, railways, roads and other surface improvements.



Mid-Kansas Oil & Gas Co.'s No. 30-A well, located about 1¼ miles west of Pecos River that struck the seepage oil at a depth of about 240 feet in the 15-inch hole. It only produced for a short time.

It will be the policy of the board in charge of the University land to be gov-

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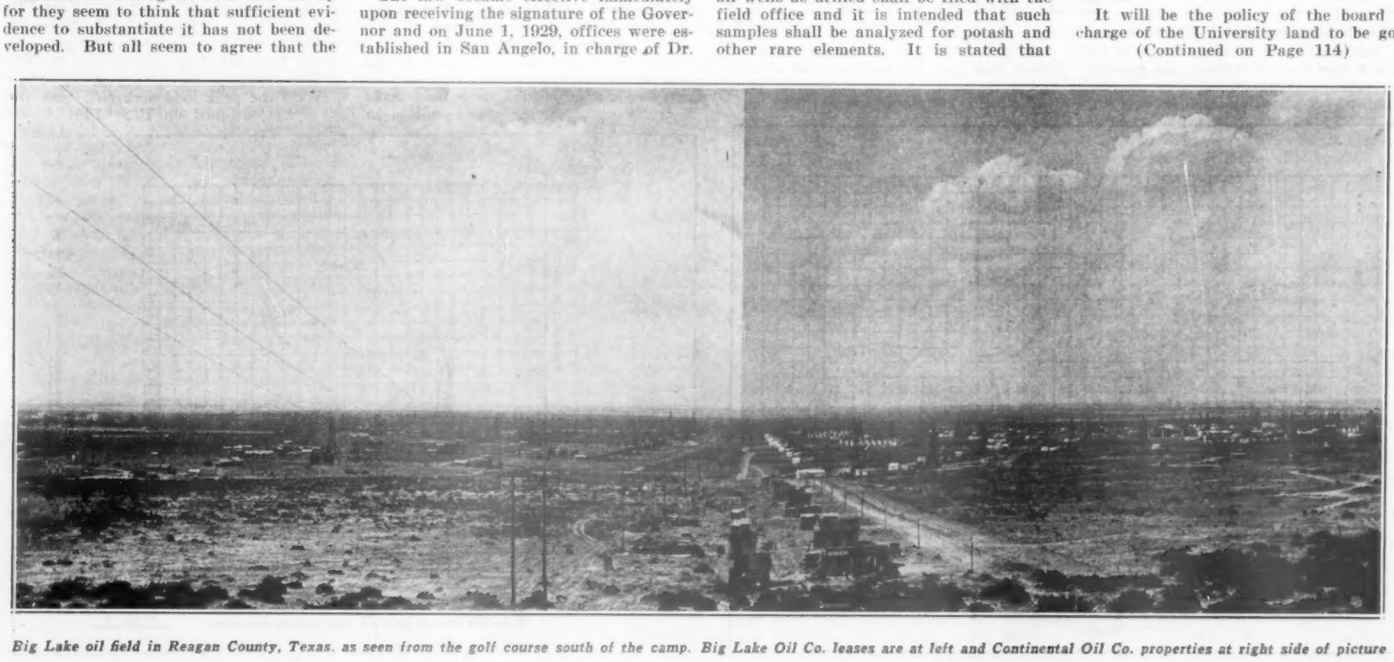


Big Lake oil field in Reagan County, Texas, as seen from the golf course south of the camp. Big Lake Oil Co. leases are at left and Continental Oil Co. properties at right side of picture

John B. Tonkin Leader in Gas Industry

For a Time It Looked as Though He Might Tread the Quarterdeck or Command a Brigade or Something, but He Got Over That

By Thomas F. Smiley

It looked for a while in his earlier years as though John B. Tonkin, vice president and general manager of the Peoples Natural Gas Co., wanted to see how close he could come to entering upon a naval or military career without actually doing it. Three different times he darted into army or sea life, emerging on each occasion without having formed any entangling alliance.

First he entered the United States Naval Academy, Annapolis, Md. At this period he had a pretty clearly defined intention of devoting his life to the quarterdeck. It looked to him as though sooner or later there was going to be a lack of really good admirals. However, after a year at the academy he changed his mind, deciding to let the country meet any shortage in the naval establishment in its own way.

Then while living in Toledo, Ohio, he joined the Toledo Cadets, an unattached company of the Ohio National Guard. He was a private in this organization and had a lot of fun besides doing setting-up exercises, mastering the manual of arms and learning something about the school of a soldier. But it didn't mean anything so far as the main current of his life stream was concerned.

At the outbreak of the Spanish-American war in 1898, Mr. Tonkin, then 23, was living in Oil City, Pa., home of Company D of the Sixteenth Regiment, Pennsylvania National Guard. This company had been commanded years before by the late Gen. Willis J. Hulings, who led the Sixteenth in the Spanish-American War and afterward served his district in Congress. It also had been commanded by Gen. George C. Rickards, who led the regiment in the World War and later was chief of the Militia Bureau in the War Department. The company, commanded in 1898 by Capt. D. K. James, was ordered to Porto Rico. Mr. Tonkin promptly organized another company to take its place and it was mustered in as Company A, Twenty-first Regiment, N. G. P. He was made captain and he served as the company's commanding officer till it was mustered out of service in 1901.

But That Was Enough

Mr. Tonkin's connection with the National Guard, as a private in Toledo and as a captain in Oil City, along with his year at the naval academy, had given him a bit of the military atmosphere he liked without interfering with his regular work. In the meantime he had got a good start in the natural gas industry, in which he was to become an outstanding figure.

Until he was 13 years old Mr. Tonkin lived in Tidioute, Pa., where he was born in 1875. A short residence in Fostoria, Ohio, followed and then the family moved to Toledo. John attended high school in that city and went to the naval academy from there.

In his boyhood Mr. Tonkin had the usual variety of vacation jobs. He recalls one of these with special clearness because of an incident which threatened to cost him heavily in social prestige. This job was that of water boy for a crew of workmen stopping leaks that had developed in the Toledo-to-Detroit line of the Northwestern Ohio Natural Gas Co. John was 16 at this time. He had been taking an active part in such social affairs as were available for 16-year-olds in that day. There were parties, dancing, picnics, buggy-rides, etc.

John chanced to be carrying a bucket of water near the public highway one day when his attention was attracted by a handsome phaeton drawn by a smart team of horses. For the benefit of a younger and uncomprehending generation it should be explained that a shiny phaeton hitched to a spirited, well-matched team was just as symbolic of elegance and luxury at that time as a gaudily painted 8-cylinder sport roadster is now. As the outfit drew nearer John discovered to his consternation that the occupants of the phaeton were two pretty girls whom he knew in Toledo. If they should recognize him in his old clothes, performing the menial service of water boy he felt he never would be able to regain his social standing.

Gee, What If They'd Recognized Him!

Instinctively the embarrassed boy turned his back and busied himself handing water to workmen till the girls had driven past. To his immense relief he found out later that he had not been recognized and that his social position remained unshaken. A little later young Tonkin was raised to the more dignified job of timekeeper.

John's first job after schooldays were over was with the River Gas Co., of Marietta, Ohio, as clerk for the superintendent of construction. After four months of it he went to Oil City January 1, 1895, to take a position in the purchasing department of the National Transit Co. This was before the dissolution of the Standard Oil Co. into its constituent companies, and the National Transit's purchasing department bought all supplies for the various producing, pipe line and natural gas companies in the Standard group.

With the incorporation in 1898 of the Hope Natural Gas Co., operating in West Virginia, and the East Ohio Gas Co., operating in Ohio, both Standard subsidiaries, young Tonkin was made general bookkeeper, with an office in Oil City. He remained in this position until February, 1902, when he was made treasurer of the Hope company and moved to Pittsburgh. The Hope launched upon an expansion program about this time, in pursuance of which it bought the gas interests of the South Penn Oil Co. and the Flaggy Meadow Gas Co. (West Va.)

In 1903 the Reserve Gas Co., a producing concern operating in West Virginia, and the Connecting Gas Co., a pipe line company operating in Ohio, for transporting natural gas, were incorporated, with the Standard Oil Co. owning 51 per cent of the stock of each. Mr. Tonkin was made treasurer of each.

And Still Another Treasurership

The Hope in 1910 absorbed the Mountain State Gas Co., supplying Parkersburg, Sistersville and other Ohio River towns with natural gas. At the same time the Standard acquired control of the River Gas Co. and its treasurership was added to the string already held by Mr. Tonkin.

In June, 1918, Mr. Tonkin was made vice president and general manager of the Peoples Natural Gas Co., a Standard subsidiary operating in Pennsylvania, with more than 1,200 wells in the southwestern part of that state and leases on more than 235,000 acres of unproven land in Pennsylvania. As the Peoples, like its sister company the Hope, had its offices in Pittsburgh, the promotion did not involve any change of residence.

Mr. Tonkin in 1900 married Miss May Simpson, daughter of Thomas B. Simpson, an extensive oil producer of Oil City. Mr. and Mrs. Tonkin still reside in Pittsburgh. They have no children.

Startling as the revelation may be to anybody familiar with Mr. Tonkin's well-ordered life, it may as well be set down here that he was in jail once. However, it might have been worse. He might have got there against his will and he might have had to stay longer than he wanted to. But he didn't do either. In fact, his visit provided a rather welcome diversion from the routine of his daily work. It was while he was timekeeper for the Northwestern Ohio Natural Gas Co. on the Toledo-to-Detroit pipe line.

Pay Envelopes Still Pursued Them

One night the Polish laborers got into a fight and one of them was killed. Four other members of the crew were arrested and put in the Lucas County jail in Toledo. When the next payday arrived Dennis Hastings, foreman, later general manager of the Oklahoma Natural Gas Co., sent young Tonkin to the jail to give the four prisoners their pay envelopes. John went to the jail, explained his mission to the warden and was taken to the cell room, where he deliveried the envelopes. He didn't like the accommodations and he never went back.

As clerk of the River Gas Co. Mr. Tonkin made many trips through wild regions of West Virginia traversed by the company's pipe lines. At these times he was accompanied by W. D. Jacobs, superintendent of construction for the company and afterward superintendent of the Buckeye Pipe Line Co. One day when the two men were driving out to the line Mr. Jacobs stopped the horse—there were no automobiles in those days—at a spot where a big boulder bulged from the hillside above the road. "Come on up to that rock and I'll show you something," he said.

Mr. Tonkin clambered after the other man up the steep rise through thickets to the projecting stone, in the face of which he found upon close inspection a recess had been cut, apparently with mallet and chisel. This recess was about 6 feet long, 2 feet high and 2 feet deep. Mr. Jacobs explained that the cavity was the work of an eccentric mountaineer of the district, who planned that his body should be entombed in it upon his death. There was no sign of human life anywhere about.

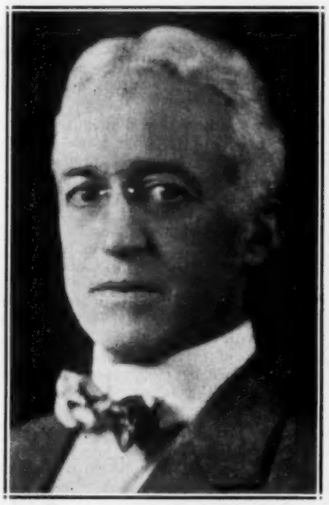
Queer Place to Put Four Bits

Mr. Tonkin's interest was stirred, but when he saw his companion lay a silver half-dollar on the floor of the crypt his

(Continued on Page 106)

NOT ONE "I" IN THE WHOLE REPORT

Although in personal command of the ships that smashed Admiral Cervera's Spanish fleet at Santiago Harbor, Commodore Schley was not mentioned in the report of the battle by Rear Admiral Sampson, who had arrived when the engagement virtually was over. Sampson's action in taking credit for the victory elicited no complaint from the man who had directed the actual fighting. Schley remarked simply, "There's glory enough for all." The incident fixed Schley's place in history. It fixed Sampson's too.



John B. Tonkin

In the quick succession of new problems and situations in modern industrial organizations there are frequent opportunities for men to reveal their inner selves and attitudes even as a sea battle brought out the contrasting characters of two naval officers in the Spanish-American war.

For instance, here are a few fragments from one of the most dramatic stories in the annals of natural gas, the story of how the 20-inch line providing the great Pittsburgh, Pa., district with gas blew up on a bitterly cold day in midwinter, and how the break was repaired in 45 minutes by men trained to handle just such emergencies:

"First news of the break came from a line walker. He grabbed the telephone at his reporting box. . . . The pressure chief at Brave saw his chart taking a perpendicular skid. No telephone. Boilers were full of steam. But boilermen and all of the crew handled the situation to perfection. . . . One crew that had set out from Waynesburg found the break in an incredibly short time. J. L. Ridgway and Joe Chilcote, division foremen, reached the spot first. . . . Every one was on the job and plunged in to set matters aright. . . . Ross Gray soon had all compressor stations to the north pounding away in full."

The whole report goes like that. "Field men, pressure men, pipe liners and repair men all shared honors," it says. Not an "I" anywhere. The report was written by John B. Tonkin, vice president and general manager of the Peoples Natural Gas Co., who was in charge of the entire alert, smooth-running organization.

Uniform Voltages and Rate Structure

Author Suggests Consideration by Joint Committee of Oil Operators and Power Companies. Interesting Comparisons

By E. Stanley Durward
Divisional Mechanical Engineer, Shell Petroleum Corp., Dallas, Tex.*

Electric power for use in drilling or pumping oil wells is purchased at present under a multitude of rate schedules, many of which are incomprehensible except to electrical engineers, and it is very desirable that there be a standard price structure and simple purchase contract that anyone can understand.

The difference between electric power and other tangible and visible commodities renders very complicated the formulation of a standard rate structure. A few comparisons will illustrate this point.

Consider first an ideal purchase method for electric power as a basis and note how the various factors that have to be taken into consideration affect and control the attainment or otherwise of that ideal.

An ideal way to buy electric power would be to purchase it in the same way as any other product; namely, at so much per kw-hr. (kilowatt hour), without any other considerations, in the same way as one buys gasoline. It will be asked why this cannot be done without any difficulty, so let gasoline be compared—any other product would do equally well—with electric power.

Electricity, though invisible and intangible, is just as much a salable commodity as gasoline or any other product.

Comparison With Other Commodities

The price per gallon of gasoline may be said to be regulated first at the refinery, by the cost of the raw product, plus cost of manufacture—(this to include interest and depreciation, etc., in plant, overhead and so forth), plus a profit to the refiner. Secondly, price is controlled at the refinery by the market demand for gas, stocks available and refinery output. These factors go to make up an f.o.b. refinery price. The natural result of wide competition and a world wide market is that f.o.b. refinery prices are more or less alike everywhere, automatically resulting in a basic rate structure for gasoline. Normally, then, the price for any given district is refinery price plus freight and handling to the point of delivery to the individual customer.

Now consider electric power. As in the case of gasoline, electric power could be sold at so much per kw-hr. at the plant, taking into account in its production the same cost factors that govern a gasoline price, but the market is local and limited instead of world wide and in many cases the power company has little or no competition except from other types of power.

Location and Operating Factors

If the refiner has a demand for more than he can make, he is not compelled to enlarge his plant unless he wishes to do so.

An electric power company, being a public utility, is compelled to a very great extent by law to increase its plant to meet the demand. If gasoline sales fall in one district as the result of business depression, the refiner can ship his product to other districts or even foreign countries where a demand exists. The power company cannot do this. If the demand for gasoline decreases to that point where the price fails to return a profit, the refiner can shut down his plant and no one can complain or force him to continue operations. A power company cannot do this—it is not permitted to do so.

A refiner can take advantage of market conditions throughout the world and when conditions are favorable, can make more profit to offset the low profit or loss periods. A power company cannot do this. Its maximum rate of profit is controlled by law.

Consider the actual manufacture of goods and the location of plants. The refiner can choose the most advantageous points at which to locate his plant. As a result the cost of refinery operation may generally be considered as fairly uniform, which tends to make cost of product uniform or at any rate within close limits between high and low.

On the other hand the choice for location of a power plant is somewhat restricted and the power company cannot always choose the place where power could be most cheaply made and delivered to the point of sale. The result is that electric power production costs vary quite widely instead of being reasonably uniform. To illustrate: One power company generates power by hydraulic turbines and by steam plants, firing the boilers with gas from its own gas wells; another company operates a steam plant, using lignite coal from its own mine; a third company generates some of its power with a steam plant for which fuel oil is purchased; others more advantageously situated generate entirely by hydraulic power.

The generation of electric power by hydraulic turbines is cheaper than by steam; a gas-fired steam plant requires less labor and equipment than a coal-fired plant and an oil-fired steam plant comes in between the gas-fired and coal-fired plants. Generating costs are higher if the power company buys its coal, oil or gas than if it owns the mine or oil or gas wells.

Such circumstances cause considerable variations in the cost of generating power at electric plants. Therefore, that fixed standard or base rate for power f.o.b. plant which would enable the most unfavorably located plant to make a fair profit, would be unnecessarily high for the most favorably located plant.

Distribution and Sale

A refiner can sell his product over the entire world, but the area over which a power plant can sell its product is strictly limited. It is very evident that this fact alone creates a fundamental difference to be overcome before the adoption of such a standard rate scale as now obtains in the sale of many other commodities.

The refiner can distribute his product by his own pipe lines—if this be advisable—by railroad, automobile truck, and by steamer or barge, on river, lake or sea. He has three regularly operated methods of transportation at his disposal—the power company has only one—its own distribution system. Within these three means, besides his own equipment, the refiner has available the duplicate equipment of other transport-equipment owners, all of whom are competing for his business. Sometimes he can take advantage of extreme competition and ship his product by companies which are operating at the barest of profits and thus at a very low cost.

The power company does not get this opportunity. On the other hand, because of its responsibility to give reliable and steady service, it is compelled to install an expensive distribution system. If sales fall in a given district, the refiner can use his own transport equipment elsewhere; if he has automotive equipment he can deliver in a new area where sales can be made, or he can send his tank cars over another route at no great cash outlay. A power company cannot do this without considerable expense. Should sales die out in a given area it has to dismantle its transmission lines and reerect them in a new area.

Peak Demand and Future Demand

Another radical difference in the distribution of electric power as compared to other commodities, is the maximum or peak demand and "future demand" problem. For all tangible commodities, such as gasoline, it is possible to have local storage points from which a supply of the commodity can be quickly distributed within the area served by the district store. A power company cannot store surplus power at a district power substation. The transportation of gasoline to main district stores, which are analogous to power substations, can be carried out with a fleet of transport units working 100 per cent capacity—there is no need for transport equipment which is used only to handle peak loads. A power company must put in a transport system capable of carrying the peak load, which means that all the equipment cannot be operated to 100 per cent capacity continuously. In the case of future or increased demand, the same sort of situation arises. A small increase in gasoline transport units, working full time and carrying full load, is all that is required to take care of the situation as against an increased transport or transmission system capable of handling all the maximum increased demand at any moment. This equipment will then, of course, carry the full load only part of the time.

"Customer Costs"

The next item to be considered may be termed "customer costs." This is the expense involved in serving the individual customer. Deliveries made by railroad, steamer or outside-owned trucks may be neglected, as in electric power distribution only exceptional cases arise in which outside parties own the transmission lines. In wholesale delivery by company truck the costs include loading the truck, driving it to the customer's place of business, unloading and returning for another load, plus the cost of billing out the goods and collecting for same, etc.

In the case of the power company, the customer cost includes delivery of the power to the purchaser's property, reading the meter, billing and colleting the charges. In this case, however, a part of the power company's transport equipment—power line, transformer, substation, meter equipment, etc.—having sufficient carrying capacity to meet the customer's full requirements, is completely tied up for the sole use and service of the individual customer. In case of other commodities, all the charges covering interest on the investment, upkeep, depreciation charges and so forth, are distributed over a number of customers because the equipment is not tied up full time for the sole benefit of one customer, whereas, with electric power, part is so tied up and all the above charges covering the tied-up equipment are covered by one customer even though he does not make 100 per cent use of the equipment.

Type of Equipment

Next for consideration is the influence of the type of equipment required to transport the commodity and the country over which it operates.

The use of mobile equipment, such as trucks, coupled with the ability to store the product wholesale, so to speak, in central distributing stations covering given areas, and the ability to keep said equipment operating at full capacity, result in a lower investment and greater operating efficiency than is obtainable in electric operation which requires permanently installed equipment large enough to carry

(Continued on Page 149)

*Presented at Galveston meeting, September 5-6, 1929, of the Texas-Louisiana-Arkansas Division of the American Petroleum Institute Division of Development and Production Engineering.

INTERESTING FALL MEETINGS ARE PLANNED BY PETROLEUM ENGINEERS

Interesting meetings of petroleum engineers have been arranged for this fall. Two meetings have been planned by the Petroleum Division, American Institute of Mining and Metallurgical Engineers. One will be held at Los Angeles on October 4 and 5, just preceding the general fall meeting of the Institute at San Francisco. The Tulsa meeting will be held October 3 and 4, just preceding the International Petroleum Exposition and Congress.

The first day of the Los Angeles meeting will be given over to papers and discussions, with sessions held in the Chamber of Commerce rooms at Broadway and Twelfth Street, while on the second day there will be field trips through the basin.

Papers First Day

Among papers on the first day's program are the following: "Geophysical Methods Applicable in California," Frank Rieber; "Well Spacing at Long Beach," Stender Sweeney; "Hard Facing Materials," Harry J. Morgan; "Repressuring Problems," H. A. Bell and E. C. Webb; "Resistance to Flow of Gas-Oil Mixtures Through Pipes," L. C. Uren, P. P. Gregory, R. A. Hancock and G. V. Feskov; "Deep Sand Development at Santa Fe Springs," Joseph Jensen; and "Experiences in Flowing Deep Wells," a joint paper by a committee.

The Tulsa meeting will be held in the Hotel Mayo, with the program centering on problems of production engineering, well spacing, hydraulics of flowing wells and economics. Among papers to be presented are the following:

"Principles Controlling Spacing of Oil Wells," W. P. Haseman; "Spacing Gas Wells," Paul Rudeman; "Well Spacing at Long Beach," Stender Sweeney and a resume of the effect of well spacing in various fields.

Doctor Pogue to Speak

On the second day Dr. Joseph E. Pogue will present a review of the economic situation in the industry. Other papers will be: "Effect of Gasoline Content on Gas-Oil Ratio Calculations," Alexander Morris; "Tubing High Pressure Gas and Oil Wells," H. C. Otis; "Electrical Welding of Field Joints of Oil and Gas Pipe," H. C. Price; "Mathematical Development of the Theory of Flowing Oil Wells," J. Versluys; "Some Observations on Principles Involved in Flowing Oil Wells," S. F. Shaw; and "Classification of Flowing Wells and Adjustment of Flow Strings," F. P. Donohue.

On the closing day of the general fall meeting of the Institute in San Francisco, October 7 to 10, many of the engineers will sail for Tokio, Japan, to attend the world conference on engineering.

The Mid-Continent district of the American Petroleum Institute division of Development and Production Engineering will meet October 7 and 8 in the new assembly hall on the grounds of the Petroleum Exposition, Tulsa.

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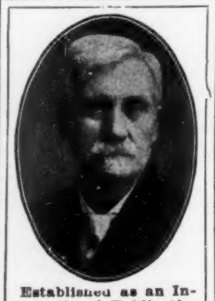

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A STEP TOWARDS STABILIZATION

The steadily increasing interest being shown by practical production men in the meetings of the American Petroleum Institute Division of Development and Production Engineering has abundantly justified the expectations of its sponsors. The actual results in field work have proved it to be one of the best investments the Institute has made.

This division is today serving as the practical school of the producing industry. Yet it is more than a school, since the lessons gained come from the exchange of experience and the comparison of knowledge acquired by both the study of scientific principles and in actual operations.

It has, moreover, bridged the gap that at first existed between the working forces in the field and the engineering advisers who at that time were relatively newcomers in the industry. It has overcome the disposition of those trained under the old trial and error system of actual experience in the field to underestimate the possibilities of technical and scientific training. On the other hand it has shown the technical man that there is a great deal not to be learned from books that can throw a lot of light on operating problems.

The net result has been to establish a mutual respect between what had once been at least unsympathetic factors in the field and out of that there has grown a unity of understanding which is being applied to the study and solution of field problems from both the practical and the technical angles that is all to the gain of the industry.

It is only necessary to attend any of the chapter or regional meetings of the division and to note the active interest displayed by the field men and the engineers in presenting and discussing their common problems. Co-operation of that sort is bound to count in increasing the efficiency of the industry with larger benefit to all concerned.

Four important meetings dealing with the engineering and production problems of the oil fields are being held in September and October. The regular fall meeting of the Texas-Louisiana-Arkansas District of the American Petroleum Institute Division of Development and Production Engineering is now in session at Galveston, Texas.

The program deals with such every-day problems as pumps for gathering oil, the protection of pipe lines against corrosion, metallurgy of hard-faced bits, waste water disposal, weighing and counterbalancing wells, care of sucker rods, repressuring practice and the drilling of vertical holes.

A notable illustration was the inclusion of a paper originally read at a chapter meeting, which is typical of the evolutionary method followed by the division, developing discussion from the exchange of personal or local experiences into a general conference on the subject for the information of the industry at large.

Meanwhile the Petroleum Division of the American Institute of Mining and Metallurgical Engineers, the pioneer organization of the petroleum engineers, is continuing and expanding its excellent work. Two fall meetings have been planned for October, one at Los Angeles preceding the general fall meeting of the Institute at San Francisco, and the other at Tulsa, just preceding the International Petroleum Exposition and Congress.

At these meetings also the papers and discussions will be of the practical type. At Los Angeles they will deal with geophysical methods applicable in California, well spacing, hardfacing materials, repressuring problems, resistance to flow of gas-oil mixtures through pipes, deep sand development, and flowing deep wells.

At the Tulsa meeting the papers will cover the principles controlling spacing of oil wells and spacing of gas wells, with a resume of the effect of well spacing in various fields, effect of gasoline content on gas-oil ratio calculations, tubing high-pressure gas and oil wells, electrical welding of field joints, mathematical development of the theory of flowing oil wells, principles involved in flowing oil wells, and the classification of flowing wells and adjustment of flow strings.

Immediately after the A.I.M.E. meeting in Tulsa the Mid-Continent district of the A.P.I. Division of Development and Production Engineering will hold its fall meeting at the assembly hall of the International Petroleum Exposition in Tulsa, October 7-10, at which the program will be largely centered on a discussion of well spacing.

In this connection it is remarked that where only a few years ago the proceedings before the Petroleum Division of the A.I.M.E. were considered in the industry as chiefly of interest to professional engineers the papers and discussions at these meetings are now thoroughly read and studied by production men who are being attracted by the discussions in the local and regional meetings of the new A.P.I. Division of Development and Production Engineering. The similarity of the programs at these meetings shows how much the two divisions have in common, the one representing the purely engineering viewpoint and the other also embracing the men in the field.

For the industry as a whole this intensive study of production problems is welcomed because only through this method can the large problem of conservation and economic operation be realized. Indeed, it will be recalled that the organization of the A.P.I. division followed the Ponca City conference on the conservation of gas which indicated that any practical scheme of conservation would have to be worked out through just such co-operation between the engineering and production staffs in the study of field problems.

Not only was the technical and scientific knowledge of the engineers needed, but their exactness in method, their ability to keep and to analyze records and to project causes and effects. The truest conservation demands economic as well as efficient production. The old-time aim of getting and producing oil regardless of almost all else has been one of the chief sources of trouble to the industry, as well as the principal obstacle to any sort of conservation.

The petroleum engineers have demonstrated their ability to produce oil, but the immediate objective is to produce it to the best economic advantage. The programs at these four meetings indicate that they are now devoting their attention chiefly to that end.

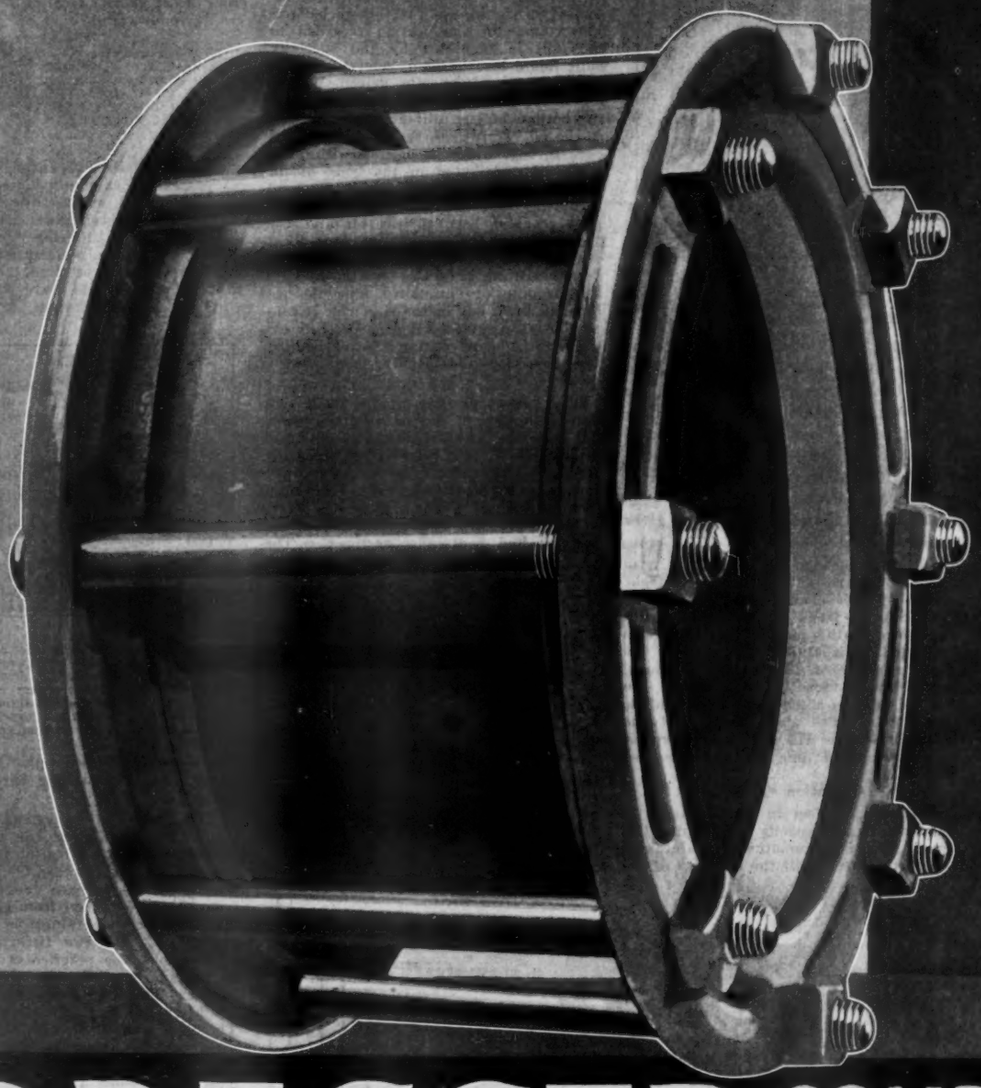
Upon their success in that regard and the readiness of executives to be guided by their findings depends the future progress of the conservation movement and of the oil industry itself.

It is an essential first step towards stabilization.

DRESSER Couplings are strong, flexible and durable, and standard equipment for Natural Gas lines.

S. R. Dresser Manufacturing Co.
Bradford, Penna.

The Standard for 25 Years



DRESSER COUPLINGS DOMINATE

Single Shell Still Replaces Battery

Producers Oil Co. Abandons Antiquated Equipment and Builds New at Cost of Less Than $40,000

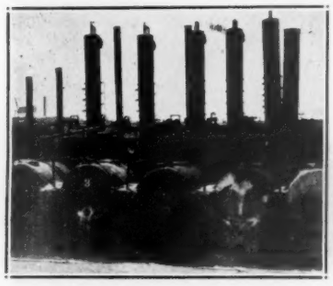
By W. T. Zeigenhain

One shell still is doing in one day what formerly it took a battery of small shell stills three days to do at the plant of the Producers Oil Co. in Bristow, Okla., through the installation of modern auxiliary equipment. The old and the new are shown in the accompanying pictures. The economies effected in the operation and the smaller investment in equipment and repairs have been sufficient to convert the plant from a losing proposition to a paying one. The quality of the products has improved as well. C. H. Fox, superintendent, who designed the new plant and supervised its construction, said: "We did it all at an expenditure of less than $40,000."

The position of the Producers Oil Co., prior to the change was similar to that of many other refiners in that partly antiquated equipment took its daily toll on earnings. There was a limited amount of money to be spent for new equipment and with plenty of salvageable materials available, the problem resolved itself into one of first deciding what to build and then to correlate most economically the reconditioning and assembling of the salvaged material with the new.

Topping Unit Unique

The resultant unit embodies many unique features. It is operated by one stillman who also runs the boiler house. He is guided in the operation by laboratory control tests which are carried out at regular intervals daily throughout the

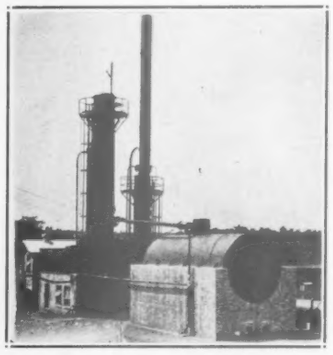


Battery of old shell stills shut down less than two weeks ago, giving way to the compact, and more efficient unit.

24-hour period. Automatic control of the unit has been applied wherever it is believed practicable.

Operation of the unit may be more easily followed by referring to the accompanying flow chart. The crude is produced locally and brought almost directly from the field to the refinery for processing. Settling of the water and b.s. from the crude is done in the refinery and is made a part of the unit's routine operation. The cold crude enters the system at three points. A portion of it passes through a cloverleaf coil in the top of the main fractionating tower as a control medium. Another portion passes through a Tulsa type exchanger section on top the exchanger tower for the same purpose. These two streams join, and together with the rest of the fresh crude, enter the gas oil exchanger. Here the crude is heated at about 180 degrees Fahrenheit and passes into a vertical drum containing baffle sections, where the water settles out. The water is continuously drawn off and the crude then enters the fuel oil exchanger. Here it is raised to a temperature of 325 degrees Fahrenheit. At this temperature it enters the exchanger tower where a 350-degree Fahrenheit endpoint export gasoline is taken off overhead, amounting to 15 per cent of the crude.

This tower is 45 inches in diameter and 33 feet high, and for fractionation, contains six bubble cap sections in addition to the reflux control in the top to which reference already has been made. The crude enters the tower about 7 feet above the base and passes down through stripped sections. The residue, amounting to 85 per cent of the crude by volume, is continuously drawn from the base and



New unit including a 750-bbl. shell still equipped with recirculating system. This still will handle 3,000 bbls. of crude daily.

enters the 7 by 18-foot settling drum or b.s. separator. This is heavily insulated so the temperature of the oil leaving the drum is approximately 325 degrees Fahrenheit. From here the oil is pumped through a series of coils made of 40 tubes, 3 inches in diameter and 8 feet long connected with welded U bends.

The coil is heated by the stack gases coming from the shell still. The economizer is supported on a concrete base into which are partly embedded eight vertical 6-inch channel irons. Two of these channel irons support each corner as shown in the picture and these are connected horizontally on top with 10-inch channel irons. To support the stack, four I-beams cross in the roof of the furnace to form a rectangle on which the stack rests. The stack gases heat the crude to 460 to 475 degrees Fahrenheit temperature and then the oil enters the shell still.

Operation of Still

This still, 12 feet in diameter and 40 feet long, has a capacity of 70 bbls. The liquid level is automatically maintained at approximately half the capacity of the still. The apparatus controlling the liquid level was specially designed and the level may be checked by an independently operated float indicator, the white arm of which may be seen against the end of the still showing the detail of the furnace.

A liquid temperature of 500 to 510 degrees Fahrenheit is maintained in the still and an overhead stream is taken off. The bottoms are continuously drawn off, part of which is returned to the still, the rest going to fuel oil storage after giving up a portion of its heat to the incoming crude in the fuel oil exchanger. The volume of the portion returned to the still is regulated by the specially built liquid level control, referred to previously. An electrically driven Worthington centrifugal pump takes suction off the bottom of the still and that portion of the oil returned to the still is pumped back through a system of coils within the still and distributed in the body of oil at many points. This effects increased turbulence and brings about a quicker heat transfer between the oil and the shell of the still and eliminates local heating or "hot spots." The still has been operating only two months and no set cleaning or shut-down schedule has been adopted, but in the first run it continuously operated 35 days. Mr. Fox expects to adopt a regular schedule calling for inspection and cleaning about every 45 days.

The vapors coming off the shell still enters the base of the main bubble tower and produce an overhead cut of 54-56 gravity U. S. Motor gasoline and a side stream which enters an auxiliary tower for complete fractionation. The main tower stands 51½ feet high and is 5 feet in diameter. It contains 11 bubble cap sections and 3 stripper sections. The cloverleaf exchanger section in the top, through which the crude is charged, controls the amount of the reflux and the quality of the product taken overhead.

At any one of six points along the side of the tower, as determined by the location of bubble cap trays, a side stream may be taken off. A manifold arrangement permits this to be done, the outlet leading to the base of the auxiliary tower. This tower is 3 feet in diameter and 20 feet high and contains 10 bubble cap sections. A stream of 46-48 gravity 450 endpoint naphtha is taken off the top and the reflux or bottoms is either returned to the still or segregated as a light distillate. This arrangement permits the manufacture of a range of different kinds of naphthas with practically no additional investment in equipment.

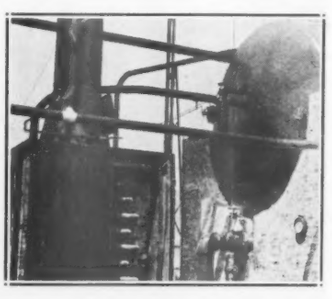
The fact that side streams may be taken off the larger tower at any one of six places provides a great deal of flexibility in the operation and also permits a greater number of these special naphthas to be made. Stoddarts solvent and other naphthas requiring a close distillation range have been made with this equipment and it is the idea of Mr. Fox that number of specialties be developed.

Plant Yields

In summary, the average plant yields from the 31 gravity local crude at present are as follows:

	Per cent
U. S. Motor gasoline	25
Naphthas	5
Gas oil (32-36 gr.)	8
Fuel oil (28-30 gr.)	
Fuel oil (22-26 gr.)	60
Fuel oil (18-22 gr.)	
Loss	2

All parts of the unit through which the oil passes is heavily insulated including the towers, still, and settling drums. This insulation has been given a hard outer surface with a thin layer of Portland cement and then waterproofed. As a matter of fire protection, the supports for the towers, etc., are also covered with the same insulation. Mr. Fox says

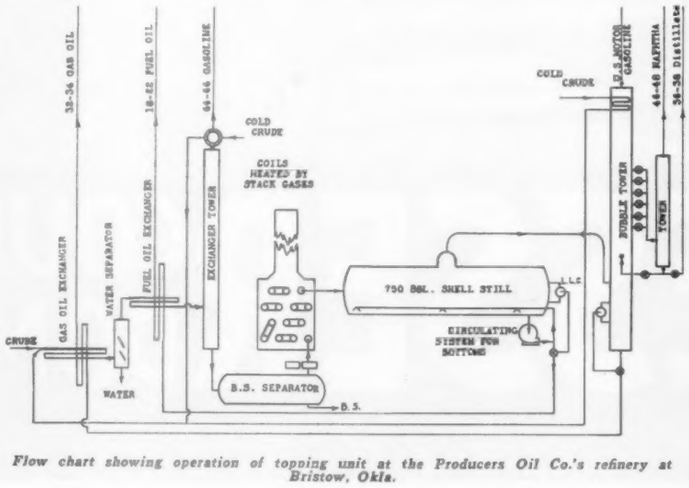


Heater coils built into the stack of the pipe still. Here the temperature of the crude is raised about 130 degrees Fahrenheit. Note also the compact and neat arrangement of the special automatic liquid level control and the float type liquid level indicator at the end of the still.

fuel economies have brought the fuel bill to less than 2 cents per barrel of crude processed.

As examples of the economies effected in the construction of the unit, it was pointed out that all bricks, including the fire bricks, were salvaged from antiquated equipment, the furnace doors were made from sheet iron taken from an abandoned tank and reclaimed pipe was used almost exclusively. But few fittings were used in the lines, the practice of bending the pipe being carried out wherever practicable. This was described as a simple job after the men tried it a few times. The pipe was filled with dry sand and then heated. After it was certain all moisture had been expelled, the pipe was closed and when it became sufficiently heated, it was bent without forms, using the desired radius required for each connection.

Another feature of the plant is the manner of lighting it at night. Flood lights are used exclusively. These are generally of 500 watt capacity and are located at points in the yard, so that all parts of the plant are about equally well lighted. These lights are generally placed on pipe poles or on power line poles, and the wiring is carried in conduits laid underground. This promotes safety from the standpoint of fire hazard and also practically eliminates the chance of workmen receiving a shock.



Flow chart showing operation of topping unit at the Producers Oil Co.'s refinery at Bristow, Okla.

It is better and more profitable to produce cracked gasoline by the Dubbs Process than to chemically dope straight run produced from the crude

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

ALL SET FOR TRI-STATE MEETING OF OIL ENGINEERS IN GALVESTON

By L. E. Bignell
Petroleum Engineering Editor

GALVESTON, Tex., Sept. 3.—Committees in charge of the fall meeting of the Texas-Louisiana-Arkansas district of the American Petroleum Institute Division of Development and Production Engineering to be held here Thursday and Friday of this week are all set for entertainment of the visitors. Sessions of the meeting are to be held in the Galvez Hotel.

The local committee has received word that D. H. Levy of the Magnolia Petroleum Co., Dallas, Tex., who was to have delivered a paper Thursday forenoon on "Centrifugal vs. Reciprocating Pumps for Gathering Oil," is ill, and the paper will not be presented.

Doctor Scott's Paper

Carl A. Young, Dallas, of the American Petroleum Institute Standardization Committee, says that the paper of Dr. Gordon N. Scott of the American Petroleum Research Committee associated with the United States Bureau of Standards, "Problems and Progress in the Protection of Underground Pipe Lines Against Corrosion" will be presented orally at the meeting Thursday afternoon. Following its presentation discussion of it and of other phases of the subject, including tank corrosion, will be conducted. It is expected that the United States Bureau of Standards will release Doctor Scott's paper for publication immediately after it has been delivered at the Galveston meeting.

Six of the principal papers scheduled for presentation on the two days of the meeting are published in this number of The Oil and Gas Journal. Discussion of these papers will appear in the issue of September 12.

Lively Golf Contest Expected

Indications point to a lively golf tournament at the Galveston Country Club Friday afternoon, starting at 1:30 o'clock. Prizes are to go to the winners. A banquet at the club house Friday evening will be the closing feature of the meeting. The entertainment features are in the hands of the Houston Wildcat Committee of the Mid-Continent Oil & Gas Association, with W. L. Childs and E. R. Ames in charge. The sessions of the meeting will be held in the main ballroom of the hotel.

There is every indication of a large attendance, with interesting discussions of all papers. A complete report of the meeting will appear in next week's issue of The Oil and Gas Journal.

High Spots in Field News

WEST TEXAS

Small show of oil and gas in Ward County well.

Probable 1½-mile extension to Powell Pool in Crockett County.

Taylor-Link company's No. 2 University, Pecos County, began showing water and b.s. Shut in 48 hours, reopened and pinched down to 350 bbls, it is showing only 1 per cent water and sediment.

CANADA

Home Oil Co. reported to have biggest well in Turner Valley history, making around 30,000,000 feet of wet gas with a crude naphtha recovery of 1,000 bbls. or more.

GULF COAST

Two more good wells reported at Sulphur.

Active play around Barbers Hill and south side of Humble Pool. Sun Oil Co.'s No. 3 Chambers, Barbers Hill, flows 2,300 bbls. initial.

NORTH LOUISIANA-ARKANSAS

Deeper production found in Richland Parish.

Dixie Oil Co. has show in deepest hole in North Louisiana in Pine Island.

El Dorado discovery pool comes back with well pumping 150 bbls., 90 per cent salt water.

SOUTHWEST TEXAS

R. R. Penn's No. 1 Manford in Guadalupe County, southwest of Luling, produced 960 bbls. in nine hours. Indications that Darst Creek area agreement may fail.

Well in Goliad County, 3 miles east of Pettus, came in producing 250 bbls. through 2½-inch tubing.

CALIFORNIA

Will probably be another week or two before initial enforcement of gas conservation law is undertaken owing to preliminary work necessary. Number of operators are working on comprehensive plan for handling and distributing the gas produced.

Continental Oil Co.'s offset to Milham discovery at Kettleman Hills blew in under control doing 50,000,000 feet of gas and 3,500 bbls. of oil.

Daily production at Santa Fe Springs showed substantial drop during week due to smaller number of completions and natural decline in Buckbee and O'Connell zones.

Late News From the Fields

GULF COAST

HOUSTON, Tex., Sept. 3.—The Sun Oil Co.'s No. 3 Chambers on the south flank of Barbers Hill, was brought in today flowing an estimated 2,300 bbls. of pipe line oil from sand at a total depth of 4,465 feet.

OKLAHOMA

Another big producer has been added to the Oklahoma City Field, which extends the production over a mile north. Wirt Franklin Petroleum Corp.'s No. 2 Lowery, NE cor. SW NW, Section 12-11-3w, Oklahoma City, blew in making 261 bbls. the first hour, 463 bbls. the second hour and 192 bbls. the third hour, together with 7,000,000 feet of gas. It is producing from a sand at a total depth of 6,383 feet. It made 4,411 bbls. the first 24 hours.

The gauge of the field for September 3 was 53,211 bbls. from 14 wells as follows:

Company—	Bbls.
Coline No. 1 Olds	4,221
Cromwell No. 1 Trosper	8,294
I. T. I. O. No. 1 A. Bodine	3,340
I. T. I. O. No. 1 S. Bodine	742
I. T. I. O. No. 1 Burton	5,253
I. T. I. O. No. 1 Johnson	1,420
I. T. I. O. No. 1 Henning	1,382
I. T. I. O. No. 1 fee	1,350
Mid-Kansas No. 1 Fortson	3,751
Mid-Kansas No. 2 Fortson	2,068
Prairie No. 1 Hiddleston	3,650
Shell No. 1 Petty	8,204
Sinclair No. 1 Stamper	5,155
Wirt Franklin No. 2 Lowery	4,411
Total	53,211

Two more tests are expected to reach the pay horizon in the next few days. The Magnolia Petroleum Co.'s No. 1 Noble, C SW SW, Section 30-11-2w, is fishing for drill pipe at 6,343 feet. Indian Territory Illuminating Oil Co.'s No. 1 Fuzzell, SE cor., Section 19-11-2w, is drilling plugs at 6,521 feet. Hall-Briscoe and others' No. 1 Childs, SE cor., Section 14-11-3w, has a showing of oil at 6,339-49 feet in sand and was drilling ahead. It is being drilled on a lease that consists of only about 2 acres.

Gypsy Oil Co.'s No. 1 Noble, SW NW SE, Section 18-9-6, Seminole County, which extends the production to the north had Wilcox sand at 4,218-34 feet, where it made 342 bbls. in 12 hours and 480 bbls. in 24 hours.

The production in Sections 4 and 5-7-7, southeast Little River on Tuesday morning's gauge, was as follows:

Company—	Wells	Bbls.
Cont., Shaffer	2	2,000
Gypsy, Payne	3	1,595
Gypsy, Walker	1	645
Mid-Cont., Smith	9	12,355
Prairie, Thomas	2	2,059
Prairie, Carr	1	300
Sinclair, Phil	2	4,010
Texas, Chilcoat	1	1,100
Total		24,055

The production in Section 18-9-6 has been increasing as new wells have been drilled into the Wilcox sand. It made 39,590 bbls. September 3 from the following leases:

Company—	Wells	Bbls.
Amerada, Sullivan	1	3,335
Gypsy, Noble	1	480
Gypsy, Payne	4	8,024
Magnolia, A. Anderson	5	10,726
Magnolia, D. W. Anderson	2	5,375
Prairie, Calkins	1	5,305
Prairie, Raltman	3	6,245
Prairie, Wisner	1	80
Total		39,590

WEST TEXAS

In Ward County R. R. Penn and Atlantic Oil Producing Co.'s No. 1 Pecos Mercantile Co., located north corner S half Section 16, Block 34, H.&T.C. Survey, was drilling at 2,301 feet, in lime, with a small show of oil and gas.

In Crockett County Young & Donnelly's No. 1 Shannon Powell, SE Section 42, T.C.R.R. Survey, total depth 2,550 feet, with a showing of oil at 2,530-32 feet; top of the pay at 2,540 feet, filled up 200 feet with oil in one and a half hours. It is probably a 1½-mile extension to the Powell Pool.

In Pecos County the Taylor-Link No. 2 University, Section 31, Block 16, began showing water and b.s. It was shut in 48 hours and when reopened was pinched down to 350 bbls. a day and is showing only 1 per cent water and sediment. The Tidal Oil Co.'s No. 3 University, SE Section 17, Block 20, is drilling in lime at 1,855 feet and flowing sulphur water coming from 1,580-92 feet.

Shell Petroleum Corp.'s No. 1-C University, Section 31, Block 16, Pecos County, was shut in for 27 hours. When opened it flowed only 12 bbls. It is thought to be bridged by sand and will probably be deepened. The total depth is

(Continued on Page 152)

Corp. Commissioners To Be Petitioned by Okla. City Operators

A meeting of representatives of the producers in the Oklahoma City Field was held Tuesday morning, September 2, in the Sinclair Building in Tulsa at the close of which the following important statement was issued:

"The facts in regard to the greatly inadequate marketing outlet in the Oklahoma City Pool are to be immediately laid before the Corporation Commission together with production and potential production figures. All operators have signified their willingness to not oppose any fair order even if it requires a complete shut-in of all oil wells for a period of 30 days. This would also affect drilling wells when they reach the final casing point."

On Tuesday afternoon a meeting was held in the Exchange National Bank Building in Tulsa to draft the petition to be presented to the Corporation Commission.

GULF COAST MARKETS SHOWING NO CHANGES

HOUSTON, Tex., Sept. 3.—No changes were indicated in the Gulf Coast refinery market the past week. Pale and red oils continued in fair demand at the new low prices established several weeks ago, but the movement is not sufficient to indicate any immediate strengthening of the market.

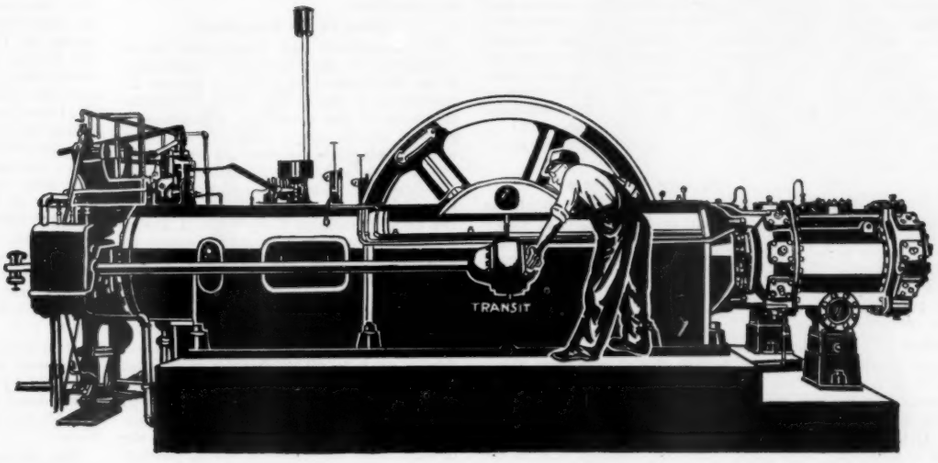
The week is opening, following the holidays, with a general inactive tone, but buyers are expected back in the market within the next few days.

Fuel oil continued available freely with no demand, eastern buyers still being unable, because of high tanker rates, to place material from coastal port in competition with the Atlantic seaboard markets. Although sellers, several weeks ago, showed a tendency to lower quotations in an attempt to absorb some of the increased tanker rate, they have stopped apparently at 70 cents, which, with a 38-cent rate, prevents coastwise movements. Gas oil also continued easy with material available at 3¾ cents.

WILL MOVE TO TULSA?

It was unofficially reported in Tulsa this week that the Dixie Oil Co. will move its Mid-Continent headquarters from Shreveport to Tulsa where it will occupy rooms in the Philcade Building, now in the course of construction. The report stated that 70 people will be moved from Shreveport to Tulsa. In the absence of Vice President McCorkle the report could not be verified.

TRANSIT



TRANSIT 17x24″, Twin, Model 26, 170 H.P., 180 R.P.M., Gas Engine with compressors.

Here *is* Something:

Confirming by test a well-established fact, Messrs. George A. Goodenough and John B. Baker in their scientific paper, "A Thermodynamic Analysis of Internal-Combustion Engine Cycles", Bulletin 160 of the University of Illinois state that "a lean mixture gives a higher efficiency than a rich mixture."

The difficulty with gas engines has been to cut the gas down to the last notch without backfiring.

Here is an engine with a mixing arrangement that will enable you to adjust the mixture so lean that the explosion pressure is no higher than the compression pressure—and the engine will then burn the mixture without backfiring.

This Means Economy.

Agents

FRICK-REID SUPPLY CORPORATION
Tulsa, Okla., or any store.

REPUBLIC SUPPLY COMPANY
of California
Los Angeles, California

E. L. WILSON HARDWARE CO.
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NATIONAL TRANSIT
Pump & Machine Co.
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St. Louis, Mo.

Oklahoma City Wells Average High

Unrestrained, the New Field Threatens Crude Oil Market Structure. Efforts to Meet Situation

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

With the Oklahoma City Field averaging 47,615 bbls. per day in production in the week ending Saturday, Oklahoma's total increased to an average of 735,315 bbls., as against 727,010 bbls. per day the week previous. The Seminole Field averaged 303,910 bbls., an increase over the week before when the average was 301,410 bbls. The Oklahoma City Field, with its threatening aspect as regards the crude oil price situation and the efforts of the operators there to avert a situation that would injure the general market condition was the most important field in the State in the past week, so far as general interest was concerned.

Oklahoma City Situation

Oklahoma City producers can learn a lesson from Seminole. They will recall that in the fall of 1926, 40 gravity oil in the Mid-Continent was selling at $2.61 per barrel, but on November 1, with the Seminole Field producing close to 100,000 bbls. a day of 40 gravity crude the Mid-Continent price schedule was lowered and 40 gravity oil was reduced to $2.10 per barrel, and later, by repeated cuts, was lowered in March, 1927, to $1.21 per barrel, a reduction of $1.40 or nearly 54 per cent. When the price had fallen to $1.21 per barrel the production of Seminole had risen to 309,410 bbls. but the production of Oklahoma was only 708,640 bbls., or say 25,000 bbls. less than at this writing. It took months to get a price above $1.21 for 40 gravity oil, the price being kept down until the fall of that year.

When the first cut came in the fall of 1926 the production of the United States was only 2,340,109 bbls. per day while it is now hovering around 3,000,000 bbls. per day, an increase of say 660,000 bbls. The Mid-Continent Field was producing 1,279,459 bbls. while now it is producing about 1,600,000 bbls., an increase of about 320,000 bbls. California was then producing 630,000 bbls. while now it is producing around 875,000 bbls., an increase of say 245,000 bbls.

Price Is Low Now

Oklahoma operators are now receiving $1.65 for 40 gravity crude for which low price they can blame the long overproduction of Seminole, but if they get one or more cuts and bring their high gravity crude below what it ever was before in the Mid-Continent Oklahoma City oil men can blame only themselves.

The first cut caused by Seminole production came very soon after the purchasing companies began to run oil into storage. The same companies have been **storing oil for weeks** recently, but trying hard to maintain the present price, which is low enough, as all will agree. A large sudden overproduction would have a demoralizing effect on the market in its present condition and at this time of the year, when we are approaching the season of lower consumption and lower crude runs to refinery stills. It was with this thought in mind that the companies sent representatives to a meeting in Tulsa last week to discuss proration.

The first meeting showed plainly that all but possibly one company favored proration. Then a second meeting was held and an even more thorough way was agreed upon by most of those present as the solution of the problem, that being to recommend to their companies a complete shutting in of the production of the Oklahoma City Field for a period of 30 days, during which time no wells should be completed. To carry out this plan would require not only the consent of the interested producers, but of the owners of royalties on the producing properties and possibly the Oklahoma State Corporation Commission. It was hoped that the royalty owners could be made to see the necessity of the plan in order to save themselves from a drastic cut in the price of their royalty oil, and that the Oklahoma State Corporation Commission could be shown that it was in the interest of oil conservation.

Influence on Others

A complete shutting in of Oklahoma City production, or if this fails of agreement, a proration of runs down to actual market requirements, would have a favorable effect in California, where thoughtful oil men are trying to reduce the tremendous overproduction in that State by 200,000 or 250,000 bbls. a day with the aid of the gas conservation law and the voluntary action of the producers themselves. The Pecos and McCamey areas in West Texas are capable of producing a volume of flush crude greater than has ever been produced by any two other fields, but excess oil is being kept in the ground and as far as drilling operations are concerned they represent two of the least active areas in the world. In fact, they are deadly dull. After the manner of operators in the great fields of Europe and Asia, operators there are producing only the market needs and are in no mind to treat an unappreciative world to a cheaper spree of petroleum products.

The Texas Panhandle has staged a comeback, which is centered in Gray County, and this Gray County crude is good oil and is in direct competition with every barrel produced in the State of Oklahoma. Kansas is producing more than it ever did in any other year.

The spurt in the Panhandle and the scattered flush production in Kansas in themselves have had no effect on the market price of crude oil. It will take a big flush production to do that and the only field threatening this is the Oklahoma City area, which promises to be one of Oklahoma's largest producers. The oil is of high gravity and is said to compare with Burbank oil in lubricating oil content. It is too good a crude to sell at a sacrifice.

Soon to Be Completed

The Engineers and Production Men's Committee of the Operators' Committee of the Oklahoma City Field on August 27 submitted a report to Wirt Franklin, chairman of the operators' committee, a part of which was a table showing the wells which might be expected to be completed between August 22 and October 1. Three of the wells were completed when the report was submitted. These were the Shell Petroleum Corp.'s No. 1 Petty, which the committee estimated would be a 7,500-bbl. well. It produced 11,698 bbls. on the gauge reported the morning of August 29, but the oil was being pumped from the slush pit and may not have all been the production of the previous 24 hours. However, it may be regarded as a 9,000-bbl. producer on that day, or a better well than the committee's estimate. The Cromwell, Franklin, I. T. I. O., Foster, jointly owned No. 1 Trosper Park, which was prophesied by the committee as an 8,600-bbl. initial producer, actually produced 8,000 bbls. initially and increased to 10,238 bbls. on Friday, against 180 pounds back pressure. No estimate was made on what the Indian Territory Illuminating Oil Co.'s No. 2 A. Bodine would produce intially, but it made 2,431 bbls. the first day. The other wells that are expected in by October 1 and their estimated initial production are as follows: I. T. I. O., Foster, Cromwell and Franklin's jointly owned No. 1 Fuzzell, SW NW Section 19-11-2w, due August 28, estimated at 4,000 bbls; Indian Territory Illuminating Oil Co.'s No. 1 Foster, C SE SE Section 24-11-3w, due September 15, 4,000 bbls.; same company's No. 2 Button, C SW NW SW Section 19-11-2w, due September 15, no estimate; same company's No. 1 Trosper, C NE SW Section 13-11-2w, due September 7, 4,000 bbls.; Sinclair Oil & Gas Co.'s No. 1 Kinter, NW SE Section 30-11-2w, due September 10, 4,000 bbls.; Coline Oil Co.'s No. 2 Olds, C NE NW Section 24-11-3w, due September 15, 4,000 bbls.; Wirt Franklin Petroleum Corp.'s No. 2 Lowery, C E half W half NW Section 12-11-3w, due September 15, 4,000 bbls.; Indian Territory Illuminating Oil Co.'s No. 1 Watters, C NE NW NE Section 25-11-3w, due September 20, 4,000 bbls.; same company and Emerson's No. 1 Joyce, C NE NE NE Section 25-11-3w, due September 20, 4,000 bbls.; Coline Oil Co.'s No. 3 Olds, NW cor. Section 30-11-3w, due September 25, 4,000 bbls. In addition to these several wells that were drilling deeper were expected in early in September. It will be noted that the committee placed no lower estimate than 4,000 bbls. on any of these soon-to-be-completed wells. The estimate is low, as the 14 wells already producing were averaging over 4,000 bbls. per well on August 29, and some of them were old wells.

It is likely that all of the wells above mentioned will be completed before the dates set by the committee unless a shutdown order is issued. They could easily add 50,000 bbls. to the production of the field.

The Sinclair Oil & Gas Co. made two new locations in the past week on its Stamper lease, one in the NE SE SW and the other in NW SE NW Section 30-11-3w. These will be known as Nos. 5 and 6. Shell Petroleum Corp. is digging cellar and getting ready to build rig for No. 4 and 5 Petty in the northwest quarter of Section 30-11-2w. No. 1 Petty was producing 8,062 bbls. on Friday's gauge with the drill pipe still in the hole.

New Wilcox Pool

The Shaffer Oil & Refining Co.'s No. 2 Littlechief, C SW NW NE Section 4-18-5, within a couple of miles of the company's refinery in Cushing, Payne County, Oklahoma, found Wilcox sand from 3,482 to 3,517 feet, total depth. The last three feet was pay and the well made 558 bbls. naturally the first 24 hours. The company had started several wells for the Wilcox sand in that area, but has always stopped in one or another of the gas sands, Peru, Jones or Prue, and taken the gas production for fuel for the refinery. No. 2 Littlechief is the first well drilled to the Wilcox sand and opens a new Wilcox Pool.

In the past week No. 2 Littlechief was drilled deeper to 3,526 feet and the production was increased to 896 bbls. per day. Locations have been made for several wells in Section 4-18-5 as a result of this discovery. The Pure Oil Co. is rigging up in C NE NE SW Section 4 and the Shaffer Oil & Refining Co. has a rig up for No. 1 Echo Hawk, C SW SW NE Section 4; cellar dug for No. 2 Echo Hawk, C NE SE NW Section 4; rig up for No. 2 Matthews, C SE NE NW Section 4. The company has a gas well in an upper sand in No. 1 Matthews C NE NE NW of the section. The Transcontinental Oil Co. has rig up for No. 1 Dawes, C NW NW SE Section 4.

A log of the Shaffer Oil & Refining Co.'s No. 2 Little Chief, from the base of the Mississippi lime to the Wilcox sand, is as follows:

3,385 feet—Base of the Mississippi lime.
3,385-3,420 feet—Chat and shale.
3,420-36 feet—Viola white lime.
3,436-40 feet—Lithographic lime.
3,440-50 feet—Oily sucrose dolomite.
3,450-55 feet—Fine and coarse sand.
3,455-72 feet—Cherty, coarse sandy dolomite, with green shale splits and chert bands, with heavy concentrate of oil in cavernous openings and through all of material.
3,472-75 feet—Oil-soaked sucrose dolomite.
3,475-82 feet—Coarse sandy, oily dolomite.
3,482 feet—Top of Wilcox sand.

Seminole Area

Nothing sensational came out of the

(Continued on Page 125)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Bros.' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	Shut down 800 ft.
Washoma Oil Co.'s No. 1 Acre, SW cor. NE Sec. 14-24-11w	Rig.

BECKHAM COUNTY

Kay and others' No. 1 Martin, C E half E half NW Sec. 32-8-24w	Drlg. 840 ft.
Producers Exploration Co.'s No. 1 Seidell, SE cor. SW SW Sec. 17-9-22w	Shut down 2,402 ft.
Carson and others' No. 1 Danby, SW cor. SE NE Sec. 20-8-22w	Shut down 1,547 ft.

BLAINE COUNTY

Lewen and others' No. 1 Unknown, NW cor. SW NW Sec. 27-16-11w	Spudded and shut down.
Washoma Oil Co. and others' No. 1 Phillips, C NW SW Sec. 13-19-10w	Drlg. 2,945 ft.

CADDO COUNTY

Abernathy & Brown's No. 1 Horton, SE cor. Sec. 8-6-13w	Shut down 535 ft.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w	Shut down 3,394 ft.

CLEVELAND COUNTY

Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w	Shut down 3,130 ft.
Phillips Pet. and T. B. Slick's No. 1 Sudick, NE cor. NE Sec. 8-10-2w	Drlg. 7,049 ft.; water.

COAL COUNTY

W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e	Fishing for bailer at 1,285 ft. (corrected).
McGinley & Sigler's No. 1 Willsey, NW cor. SE SE Sec. 7-2-8	Drlg. 2,814 ft.
E. W. Whitney's No. 1 Brown, C SE NE Sec. 10-2-8	Shut down 202 ft.

COMANCHE COUNTY

Muse et al's No. 1 Cross, NW SW SW Sec. 4-1-9w	Dry and abandoned 2,803 ft.
Green and others' No. 1 Wilson, C NE SW Sec. 14-1-12w	Shut down 4,055 ft.

CREEK COUNTY

Shaffer et al's No. 1 Moore, SW SE SE Sec. 2-18-9	Wilcox 2,990-3,000 ft.; hole full of water; abandoned.

(Continued on Page 100)

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Stocks in All Principal Fields

Good Wells Added to Greenwich Pool

Discovery Well in State Line Pool, Kansas, Quits Flowing When Offset Comes In. Wildcat Results

By W. A. Spinney
Staff Correspondent, Kansas Fields

The Kansas fields averaged 127,920 bbls. a day in crude oil production in the week ending Saturday. The feature of the week was the promising showing of oil in a test a mile southeast of the city of Wichita, in Sedgwick County, where E. W. Marland, Inc., and Producers & Refiners Corp.'s No. 1 Mackey found the showing in chat at 2,960 feet. Five-inch pipe was run and at the close of the week the preparations were being made for a swabbing test. There were about 40 feet of cavings in the hole when the showing was encountered.

The Greenwich Pool in Sedgwick County continues to develop good wells while the older completions keep up a high rate of production. A gauge of the wells made late in the past week showed the Shell Petroleum Corp.'s No. 1 Community, the well that opened the pool, making 642 bbls.; No. 2, 172 bbls. and No. 3, 793 bbls. The same company's No. 1 Brown, Lot 11, Block 1, made 1,500 bbls. John Rogers' No. 1 Stollie flowed 800 bbls. and E. L. Ramsey's No. 3 Mason flowed 1,457 bbls.

The test of the Skelly Oil Co., C NE SE NE Section 16-32-4e, Cowley County, found Siliceous lime at 3,266 feet and drilled in 5 feet. The hole filled with water, with an oil showing from 3,267-68 feet. The hole was abandoned as a failure at 3,271 feet.

The Gypsy Oil Co. got a dry hole in its No. 1, C SW SW Section 27-34-4w, Sumner County. The base of the lime was found at 4,780 feet; shale at 4,780-4,863 feet; Viola lime at 4,863-66 feet; Wilcox sand at 4,866-4,929 feet, where the hole filled with water; shale at 4,929-5,033 feet; sand at 5,033-63 feet with more water. It was abandoned.

The Gypsy Oil Co., which opened the State Line or Border Pool in Sumner County, a location north of the Grant County, Oklahoma line, completed the west offset to the discovery well, which offset is known as No. 1 Enderud, C SE NW SW, Section 16-35-3w, in Wilcox sand and the well started at 2,664 bbls. Immediately the discovery well dropped off and at the close of the week was producing very little oil naturally and preparations were being made to put it on the pump. The sand record of the Enderud well showed lime at 4,335-4,666 feet; shale at 4,666-4,736 feet; Viola lime at 4,736-63 feet and Wilcox pay at 4,763-64 feet, total depth. One of the Oklahoma offsets to the discovery well, the Amerada Petroleum Corp.'s No. 1, C NE NE NW, Section 16-29-4w, Grant County, was drilling in black lime at 4,630 feet and was not far from a completion.

The Shell Petroleum Corp. drilled a failure in Marion County, its No. 1, C NW NW NE, Section 34-18-2, which was abandoned at 3,002 feet. It had the base of the lime at 2,710 feet; shale at 2,710-2,956 feet; Viola lime at 2,956-3,002 feet and a hole full of water. In the same county the Tidal Oil Co.'s No. 2, C NE SW SW, Section 7-19-3, did not prove much of a well. It had a large dose of water at 2,869-71 feet and plugged back to 2,868 feet and shot with 20 quarts. The well swabbed 42 bbls. of oil and 20 bbls. of water.

Sedgwick Completions

In Sedgwick County, the busiest oil territory in Kansas, Ramsey and others' No. 3, SE cor. NE SW SW, Section 15-26-2e, Greenwich Townsite, swabbed 1,457 bbls. the first 24 hours from chat at 2,930-33 feet. Shell Petroleum Corp.'s No. 1, C SE NW SW, Section 15-26-2e, got chat at 2,897-2,900 feet and the well swabbed 777 bbls. of oil and 47 bbls. of water in 24 hours. Buel and others' No. 3, C NW SE SE Section 12-26-1w, swabbed 554 bbls. the first day from Simpson sand at 3,360-65 feet. Smith, Ash and others' No. 1, NE cor. Section 29-28-1e, got sandy lime at 3,090 to 3,163 feet and a hole full of water. It was plugged back to 3,138 feet and shot with 100 quarts in a gas pay at 3,090-3,132 feet and made a 5,000,000-foot gasser. The White Eagle Oil & Refining Co.'s No. 2, C SE NE SE, Section 20-28-1e, swabbed 275 bbls. in 24 hours from sandy lime at 3,099-3,109 feet.

Ellis County

In Ellis County, Burgher and others' test in C SW SW NW, Section 20-11-17w, pumped 79 bbls. the first 24 hours from 3,428-40 feet. The oil showed 38 gravity at first but dropped to 29 gravity. Davis and others' No. 3, C SE NE NE Section 13-13-18w, made 103 bbls. of oil and 18 bbls. of water from sandy lime at 3,015-3,115 feet. Jamot Brown and others abandoned a location in C NE NE NE, Section 13, and Blair, Hartman & Skaer abandoned a location in NE NE NW, Section 17-13-18w.

In McPherson County, Merryman & Shidel abandoned a location in C NW NE SE Section 32-18-2w.

Wilson and others were shut down at 1,441 feet with a showing of oil in their No. 1, C NW NW SE, Section 36-32-4e, Cowley County.

Showings of Oil and Water

Joe Liggett was shut down with a hole full of water in No. 1, C SE NW SE, Section 2-23-3w, Harvey County. There was water at 3,730-37 feet and another dose from the Wilcox sand at 3,840-60 feet. In the same county, the Walton Oil Co. had a rig up for No. 1, C SE SW, Section 13-24-2e. Barnsdall Oil Co. had a hole full of water in No. 1, C SW SW SE, Section 13-25-1e, Sedgwick County, in chat at 3,069-73 feet which also showed a little oil. The Continental Oil Co.'s No. 1, C NW SE SW, Section 16-25-1e, which had been drilled to 3,315 feet with no oil showing, was plugged back to dolomite at 3,320-26 feet, but swabbed only water. The Prairie Oil & Gas Co.'s No. 1, C NW SW NE, Section 21-25-1e, was a hole full of water at 3,414-21 feet. The crew was underreaming the 5-inch pipe. Barnsdall Oil Co.'s No. 1 in the C NE NE NW, Section 24-25-1e, plugged back from 3,662 to 3,061 feet and was shut down.

In Sedgwick County, Deal and others have rig up in the CNL SE SW SW, Section 15-26-2e, Greenwich Townsite, Sedgwick County. Deal and the Shell Petroleum Corp. have rig up for No. 2, SW cor. SE SW SW, Section 15-26-2e, and in the C SW SE SW of Section 15. The Shell Petroleum Corp.'s No. 2, C SE NE SE, Section 15-26-2e, had chat at 2,928-29 feet.

In Barber County, the Skelly Oil Co. and Boland had a showing of oil and gas through a hole full of water at 4,737 feet in their No. 1, C NE NW NE, Section 27-30-14w.

New Operations Started

In Ellis County, The Texas Company has a rig up for a test in C NW NE SE Section 5-12-17w.

In Ellsworth County, Swan and others have rig up for No. 1, C NW, Section 21-25-24w.

In Kingman County, Fleeler and others have made location for a test in the CEL W half E half Section 16-28-7w.

In Pratt County, the Wilcox Oil & Gas Co. has rig up for No. 1, C SW SW NW, Section 7-26-15w.

In Rice County, G. E. Brugher and others have rig up for No. 1, C SE NE NE, Section 14-21-10w.

In Russell County, Midwest Petroleum Corp. has cellar dug for No. 1, C SW NW NW, Section 31-12-15w; The Texas Company has rig for No. 2, C NW SW SW Section 31-12-15w, and the Midwest has cellar dug for No. 1, C SW SW SW, Section 4-14-15w.

In Stevens County, McKennon and others have rig up for No. 1, C NW NW, Section 29-23-36w.

In Butler County, the Lario Oil Co. in the NW cor. Section 15-26-3e, had chat at 2,772-98 feet and a showing of oil and water.

Butler County

Empire Oil & Refining Co. moved the rig in for No. 88 Koogler, NE cor. SE NE, Section 19-26-5. The rig is also on the ground for No. 89 Koogler, NE cor. SW NE, Section 19-26-5. Waltom Oil Co. and others' No. 1 Weakly, SW cor. NE, Section 2-24-3, is a rig moving in. Empire Oil & Refining Co.'s No. 5-A Hutchinson, NW cor. SW NE, Section 34-27-5, is a rig on the ground. The Prairie Oil & Gas Co. is moving tools in for No. 1 Lanier, NE cor. SW Section 34-29-5.

Barnsdall Oil Co.'s No. 1 Henrie, NE cor. NW, Section 21-26-3, has been abandoned at 3,410 feet. Empire Oil & Refining Co.'s No. 84 Koogler, SE cor. NE, Section 19-26-5, made 75 bbls. in Viola lime 2,548-2,629 feet.

Chase County

Polhamus and others' No. 2 Leighty, NW cor. SW NW, Section 36-22-9, is a rig under construction.

Cowley County

A. M. Landon and others made location for No. 1 Wheeler, SW cor. NW SE Section 24-30-4. No. 1 Daniels, NE cor. SE Section 6-30-5, is dry and abandoned at 2,880 feet. Independent Oil & Gas Co. and Vickers Petroleum Co.'s No. 2 Youle, SE cor. NE NE Section 16-32-4, has been abandoned at 3,300 feet.

Dickinson County

Kreuger and others made location for No. 1 Diehl, NW cor. NE NE Section 17-13-4.

Greenwood County

Independent Oil & Gas Co. made location for No. 12 Shephers, SW cor. NE NW, Section 11-22-10. Simmons and others moved a machine in for No. 7 Clopton, NE cor. NW Section 18-22-11. Simmons & Rhodes' rig is up for No. 1 Patterson, SW cor. Section 22-23-11. Dixie Oil Co. and Amerada Petroleum Corp. made location for No. 1 Ellis, NW cor. Section 27-23-11. Phillips Petroleum Co. is building the rig for No. 4 Beal, NE cor. Section 28-23-11. Sheedy and others' No. 3 Newman C S half S half, Section 32-23-13, is drilling at 200 feet. Empire Oil & Refining Co.'s No. 2-C Patterson, SE cor. NW SE Section 36-23-11, is rigging up. McCulloch and others' No. 1 Hinchman, NW cor. SW NE, Section 17-24-13, is spudding. Empire Oil & Refining Co.'s No. 3 Hoggett, CSL SE NW Section 9-25-13, is drilling at 260 feet.

Empire Oil & Refining Co. and Rhodes' No. 3-A Norton, SE cor. NW NE, Section 22-22-12, made 150 bbls. in sand 1,717-36 feet. No. 4-B Edwards, SW cor. NE SE Section 21-23-11, has been completed for 200 bbls. in sand 1,848-1,944 feet. Phillips Petroleum Co.'s No. 2 Beal, NW cor. NE SE Section 28-23-11, has been completed for 700 bbls. in sand 1,858-1,954 feet. Empire Oil & Refining Co.'s No. 1-C Patterson, SW cor. NW SE Section 36-23-11, made 800 bbls. in sand 1,764-1,852 feet. Parkins and others' No. 1 Carson, SE cor. NE Section 5-24-11 is dry and abandoned at 2,091 feet. Bitler & Hays' No. 1 Hammond, SW cor. NE Section 3-25-10, is dry and abandoned at 2,162 feet. The Prairie Oil & Gas Co.'s No. 1 Pees, NE cor. SE NE Section 12-24-12, had sand 1,703-1,715 feet and made 30 bbls.

Harvey County

E. W. Marland, Inc.'s No. 1 Neiman, SW cor. SE Section 26-22-2, has been abandoned at 3,210 feet.

Kingman County

Gypsy Oil Co.'s No. 1 Kincaid, NE cor. NW Section 18-29-5w, is a dry hole at 4,580 feet.

Marshall County

Irwin Brothers' No. 1 Cooper, NE cor. NW. Section 10-3-7, has been abandoned at 2,525 feet.

Lyon County

Sheedy and others' No. 1 Welsh, NE cor. SE Section 30-20-10, is a rig under construction. Phillips Petroleum Co.'s No. 1 Houghton, SW cor. Section 20-21-12, is spudding. Empire Oil & Refining Co.'s No. 1-B Schully, SE cor. Section 1-19-2, has been abandoned at 2,861 feet. Howarth & Stoddard's No. 1 Skiles, SE

(Continued on Page 122)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless otherwise marked)

BARBER COUNTY

Company, farm and location—	Remarks:
Rolland & Skelly Oil Co.'s No. 1 Pickens, C NE NW NE Sec. 27-30-14w	Drlg. 4,734 ft.; show oil.
Skelly Oil Co.'s No. 1 Temple Ranch, Sec. 13-34-15w	Drlg. 2,960 ft.
Barbara Oil Co.'s No. 1 Angel, NW cor. NE Sec. 14-33-13w	15,000,000 ft. gas 4,554-4,630 ft.; completed.
Robertson et al's No. 1 Powell, SE cor. SE Sec. 11-32-10w	Drlg. 2,100 ft.
Allison & Fitzwilliams' No. 1 Morrisse, C NW SE SE Sec. 9-30-12w	Drlg. 3,980 ft.

BARTON COUNTY

Barbara Oil Co.'s No. 3 Carter, SW cor. SE SE Sec. 2-33-13w	Rig.
Slick et al's No. 1 Sweeney, SW NE Sec. 23-17-11w	Rig on ground.
Everett & Wiley's No. 1 Ward, NW cor. SW Sec. 12-20-13w	Shut down 3,948 ft

BUTLER COUNTY

Travis et al's No. 1 Harrison, SE cor. Sec. 21-25-3	Drlg. 1,750 ft.
Milmac Oil Co.'s No. 1 Clearwater, SW cor. Sec. 33-25-3	Drlg. 1,000 ft.
Lario Oil & Gas' No. 1 Gordon, NW cor. Sec. 15-26-3	Drlg. 2,130 ft.
Sinclair Oil & Gas' No. 1 Johnson, NE cor. Sec. 16-26-3	Drlg. 1,279 ft.
Empire O. & R. Co.'s No. 1 Parks, NE NW Sec. 36-29-4	Drlg. 2,880 ft.
Arkansas Fuel Oil Co.'s No. 1 Campbell, SE cor. Sec. 9-26-3	Drlg. 1,895 ft.
White Eagle's No. 1 Bachelder, SW cor. Sec. 17-26-3e	Drlg. 2,790 ft.

CLAY COUNTY

Derby Oil Co.'s No. 1 Meimueller C NW SW Sec. 9-10-3e	Drlg. 565 ft.

COWLEY COUNTY

Landon & Slick's No. 1 Daniels, NE SE Sec. 6-30-5e	Drlg. 2,892 ft.
J. B. Markley's No. 1 Tatum, SE cor. SW Sec. 11-31-6	Shut down 500 ft

DICKINSON COUNTY

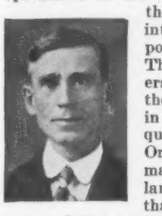
Hiatt & Durham's No. 1 Wendt, NW cor. Sec. 17-16-2	Rig.
Cress & Hawky's No. 1 Menli, NE cor. Sec. 12-15-3	Rig.
Prairie Oil & Gas Co.'s No. 1 Morgan, NW cor. Sec.	

(Continued on Page 102)

Big Deals On in Rocky Mountain Area

Charles E. Orchard Acquires Producers & Refiners Properties in Oregon Basin and New Bradford Buys Control of Argo

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area



DENVER, Colo., Sept. 2.—Drilling operations in the Rocky Mountain area the past week divided interest with several important deals reported. The Producers & Refiners Corp.'s properties in the Oregon Basin Field in Wyoming were acquired by Charles E. Orchard of Denver, making him one of the largest producers on that structure, and there is speculation as to whether the combined holdings will be turned to one of the major companies. Another Salt Creek unit is branching out into other fields and states as a result of a deal whereby the New Bradford Oil Co. will acquire approximately 80 per cent of the stock of the Argo Oil Co.

In New Mexico, Cranfill & Reynolds' No. 1-B State, in the San Simion district in Lea County, three-fourths of a mile southeast of the Texas Production Co.'s No. 1 Lynch well, is showing for a producer and swabbed 350 bbls. in five hours. Joe Cook's No. 1 State, 2 miles southeast of the Lynch well, is being abandoned. The Continental Oil Co.'s No. 1 McCallister in the Jal district, southwest of a gasser and southeast of a dry hole, has 2,000 feet of oil in the hole in an area in which gas only was expected. The Continental's No. 1 A. E. Meyers in the Eunice district is showing for a gasser.

Colorado's interest centered in the White Eagle Oil & Refining Co.'s Piceance Creek test in Rio Blanco County, which encountered wet gas that blew the tools out of the hole, and the Texas Production Co.'s White River test in the same county is at an interesting stage. The Five Square Oil & Gas Co.'s No. 1-A State, on the Berthoud Dome in Larimer County, was drilled 2 or 3 feet deeper and the oil followed the tools out of the hole and went over the top of the derrick.

Wyoming had only routine operations to report with no outstanding features.

NEW MEXICO

The San Simion district in Lea County, New Mexico, 45 miles northwest of the Jal pool, again sprang into the limelight this week when Cranfill & Reynolds' No. 1-B State, NE cor. Section 2-21-33, began to show for a producer. At 3,755 feet in lime the hole was standing full of oil and it made 350 bbls. in a swabbing test in five hours. A string of 4-inch tubing has been run and the well will be given a test. The oil tests 30.8 degrees gravity. At 3,735 feet the oil stood 1,600 feet in the hole and the increase came when it was drilled deeper.

This well is located about three-fourths of a mile southeast of the Texas Production Co.'s No. 1 Lynch, NE cor. SE Section 34-20-34, the discovery well in that area, which was completed last spring with an initial production of around 1,000 bbls. No. 1-B State appears to be running about 30 feet lower than No. 1 Lynch, based on the elevation of the top of the brown lime above sea level.

Against this encouraging news is the report that Joe Cook and others' No. 1 State, SW NW NE Section 12-21-33, located 2 miles southeast of the No. 1 Lynch and three-fourths of a mile southeast of No. 1-B State, is plugging to abandon at 3,808 feet.

The Continental Oil Co.'s No. 1 Flint, SE cor. Section 28-20-34, a mile to the northwest of No. 1 Lynch, was bottomed at 3,770 feet at last reports and was showing a little water. It is reported that this well will be plugged back to a show of oil at 3,580-90 feet and tested. C. E. Reynolds and others' No. 1 Merchant, SE cor. NE Section 15-22-34, is drilling in new hole after skidding rig at 650 feet in red rock and will set the 15½-inch at this depth. The Empire Gas & Fuel Co.'s No. 3-B State, NE SE Section 5-21-35, is drilling at 215 feet in the red beds. This location is a mile northeast of its No. 2-B State which had sulphur water at 3,900 feet.

Jal District

In the Jal district, the Cotinental Oil Co.'s No. 1 McCallister, SW cor. SE Section 24-26-36, a mile southwest of No. 1 Eaves gasser and a shorter distance southeast of Cranfill & Reynolds' No. 1 State, which was dry and abandoned, has 2,000 feet of oil in the hole at 3,234 feet and is shut down for connections. The Midwest Refining Co.'s No. 22 Gregory, SE SW Section 31-25-37, is still bottomed at 3,315 feet where it had 300 feet of oil and 50 feet of water in the drill pipe after going through several big gas horizons. The Magnolia Petroleum Co.'s No. 1 Lindley, SE cor. NE Section 26-25-36, an offset on the north to Skelly's No. 1 Joyner, is drilling at 2,610 feet in salt. The Humble Oil & Refining Co.'s No. 1-B Lindley, C SE SE Section 14-25-36, is drilling at 1,420 feet in anhydrite, and the Continental Oil Co.'s No. 1 Wells, SE NE Section 11-25-36, is drilling at 3,600 feet. This well has been showing considerable fluid, most of which is water.

In the Eunice district, the Continental Oil Co.'s No. 1 A. E. Meyers, SW SW Section 17-21-36, is drilling at 3,350 feet and is reported making 40,000,000 feet of gas and a small quantity of oil. Its location is about 2½ miles northeast of its No. 1 Lockhart which came in last March for better than 300 bbls. initial. The Gypsy Oil Co.'s No. 1 Mattern, SW SE Section 24-21-36, has succeeded in getting by the lost bit and is drilling at 3,604 feet. It was making 5,000,000 feet of gas, estimated, at 3,600 feet. Buell & Hagen's No. 1 State, C NE Section 33-11-35, in the Tatum district, is drilling at 2,255 feet in anhydrite and shale, and the Ohio Oil Co.'s No. 1 McGeorge, SE NW Section 30-20-33, Pearl district, is drilling at 3,530 feet in lime. The Maljamar Oil & Gas Co.'s No. 2 Baish, NE cor. SW Section 21-17-32, Caprock district, is drilling in anhydrite at 2,300 feet. The base of the salt was at 1,960 feet.

Humble Well Has Show of Oil

The Humble Oil & Refining Co.'s No. 1 Bowers, C NE SE Section 30-15-38, Lovington district, is drilling in lime at 3,220 feet and had a show of oil at 3,143-49 feet. This well has been through breaks making a total of approximately 12,000,000 feet of gas. The Texas & Pacific Coal & Oil Co.'s No. 2 State, NW cor. SW Section 21-23-36, Ochoa district, is drilling out plug at 3,258 feet. It is bottomed in the top of the lime. The Vacuum Oil Co.'s No. 1 State, center west section line Section 13-17-34, is listed as a completion at a total depth of 4,900 feet and is pumping 120 bbls. a day.

In the Hobbs district, Harry Walker and others' No. 1 Terry, SW SE Section 10-19-38, 1 mile southeast of the Midwest's discovery well, is drilling at 4,045 feet in lime and getting to an interesting depth. The Ohio Oil Co.'s No. 1 State, SE SW Section 9-19-38, is drilling at 2,320 feet in salt, and the Midwest Refining Co.'s No. 24 Leach, SE NW Section 15-19-38, is drilling at 2,969 feet. The Shell Petroleum Co.'s No. 1 Terry, SW NE Section 22-19-38, is drilling at 1,320 feet in red shale.

Eddy County had one failure in the Continental Oil Co.'s No. 1 Cunningham, NE NE Section 8-20-30, northeast of the Twin Mounds Pool, which is being plugged to abandon at a total depth of 1,960 feet.

In the West Maljamar district northeast of the Artesia Pool, the four wells near the completion stage continue to attract attention. The Pueblo Oil Co.'s No. 4 Russell, NW cor., Section 18-17-31, 1,200 feet east of Flynn, Welch & Yates' No. 1 Jackson, the discovery well, is showing up better than the others. It had been making around 185 bbls. a day when another break in the lime was encountered at 3,525 feet followed by an increase in the oil. On August 19 it was allowed to flow for about five hours and made 215 bbls. Flynn, Welch & Yates' No. 2 Gissler, SE cor. SW Section 12-17-30, half a mile to the northwest of No. 1 Jackson, is drilling at 3,537 feet and appears to have missed the major break found in the discovery well. Its capacity is estimated at 150 bbls. It probably will be drilled a little deeper before being completed.

May Have Missed Major Break

The Prairie Oil & Gas Co.'s No. 2 Keel, SW cor. Section 7-17-31, is shut down at 3,540 feet and also appears to have missed the major break. After swabbing 140 bbls. on the 20th it was shut down for orders and to move in more storage. The Pueblo Oil Co.'s No. 1 Lee, NE cor. Section 34-17-29, was deepened to 3,152 feet and is preparing to shoot. At 3,100 feet it had 1,500 feet of oil in the hole. Etz Brothers' No. 1 Etz, C SE SE Section 13-16-30, is drilling at 500 feet.

In San Miguel County, the Starr Oil Co., Ltd.'s No. 1 Adams, NE SE Section 25-17-16, Chappelle area, is drilling at 2,100 feet, and the Pioneer Oil & Gas Co.'s No. 1 Montezuma, SE NW Section 14-15-16, is drilling at 2,080 feet.

In Chaves County, the Cactus Petro-

GEOLOGICAL WORK BEING CONTINUED IN GREGG AND UPSHUR COUNTIES

By Neil Williams

CORSICANA, Tex., Aug. 31.—The recent leasing activity in Gregg and Upshur Counties of East Central Texas which followed the location of several seismograph "highs" has abated somewhat. Several large blocks were taken in that area by major companies, among which were Gulf Production Co., Humble Oil & Refining Co. and Amerada Petroleum Corp. This activity was occasioned by recent seismograph and geophone work as well as some geological surveys by these companies which resulted in the discovery of these supposed highs.

During that activity lease prices ranged from $1 to $4 an acre and in several isolated instances as much as $10 was paid. It is understood additional geological work is being carried on in this general area, there being several troops of geologists in these and surrounding counties. This country seems to be of some interest from a purely geological viewpoint.

Leasing over most of this division has been rather inactive with only a little scattered blocking being done. Operations over the district the past week also were featureless with many rigs shut down and operating rigs making only routine hole.

At Boggy Creek

At Boggy Creek on the southeast side, Humble Oil & Refining Co.'s No. 3-A Todd is a disappointment. It has been flowing a small amount of oil by heads from sand at 3,728 feet. This company's No. 2 Beard is drilling hard sandy lime at 2,175 feet; No. 4 Holloway is drilling sand at 3,560 feet; No. 2 Neches is in a shale and sand at 2,740 feet, and No. 4-A Elliott & Clark are drilling sandy lime at 3,018 feet. Magnolia Petroleum Co.'s No. 1 Williams on the north side of the dome is drilling sticky shale at 1,769 feet after setting a string of 10-inch casing.

Humble Oil & Refining Co.'s No. 4 Southern Pine on the Posey Saline, Anderson County, is drilling hard shale at 2,860 feet. Pure Oil Co.'s No. 1 Jackson, Bethel Dome, same county, is in chalky lime at 5,023 feet with 6¼-inch casing cemented.

In Falls County, Killam & Phillips have started drilling in their No. 3 Jones after abandoning No. 2 two weeks ago. Gruver and Associates' No. 1 Westbrook, same county, is drilling shale at 103 feet. Two new shallow tests are starting in the Mount Calm district of Hill County, J. H. Burnham's No. 1 Halderman and McElmurry and associates' No. 2 Coates. The latter is in a sand showing oil at 1,230 feet and is preparing to test. The discovery well of the shallow chalk, Harper & Latson's No. 1 Jones, still is pumping around 20 to 25 bbls. net oil. Harper & Starkey's No. 1 Jones, which continues to slop over at intervals from the chalk at 810 feet, is waiting on a pumping rig.

Leon County

In Leon County, Patty and associates' No. 1 Randall is drilling shale and pyrites at 1,168 feet. Reiter and associates' No. 1 Busby, same county, is drilling hard shale and shell at 2,617 feet. Jensen & Baggett's No. 1 Powell, west of the Mexia Field, Limestone County, is fishing at 3,100 feet. C. F. Lytle's No. 2 Thompson, Mexia Trinity test, is drilling shale at 1,630 feet. Haskell and associates' No. 1 Strange, a shallow test in Limestone County, is drilling sandy shale with streaks of sand at 1,056 feet.

General Oil Co.'s No. 1 Moore, Navarro County, is drilling sandy shale at 2,040 feet. Nash and associates' No. 1 Adams, northeast of Currie, has been shut down in sandy shale at 3,420 feet. Mason and Associates' No. 1 Marchbanks, Navarro County, has spudded.

In Rusk County, Magnolia Petroleum Co.'s No. 1 Duran, Lollar Survey, is drilling lime at 3,170 feet. Louisiana Petroleum Co.'s No. 1 Alford, same county, is drilling Austin chalk at 3,487 feet. Amerada Petroleum Corp.'s No. 1 Wade, Upshur County, is drilling shale and blue lime at 5,437 feet. Pure Oil Co. has started drilling on its No. 1 Jarman, deep test, in Van Zandt County.

Daily average production of the division for the week ending August 31 was:

EAST CENTRAL TEXAS

Boggy Creek	2,840
Cedar Creek	100
Currie	433
Hill County	22
Mexia	5,251
Minerva	650
Nigger Creek	335
Powell	7,555
Richland	335
Thrall	32
Wortham	1,015
Total	18,538
Week ending August 24	18,744
Decrease	176

leum Co.'s No. 1 State, SE cor. Section 14-10s-26, is drilling at 300 feet. H. L. Williams and others' No. 1 State, NE cor. Section 16-8n-10e, Torrance County, is drilling below 665 feet with the Pennsylvania formation as the objective.

In San Juan County, there is comparatively little activity at this time. The Angel Peak Oil Co.'s No. 1 Garland, NE NE Section 11-28-11, Kutz Canon district, was at last reports fishing for bailer which was lost last May when a fire occurred destroying part of the rig. New rig was completed several weeks ago and fishing started. Total depth is 3,065 feet and the hole is making considerable gas. The Kutz Canon Oil & Gas Co.'s No. 1 Day, SW cor. Section 20-28-10, is drilling at 877 feet and the Iowa Oil Syndicate's No. 1 Viles, SE cor. Section 28-29-11, is reported a completion at 694 feet after plugging back from 832 feet, with an initial production of 5 bbls. a day. The Great Mesa Oil Co.'s No. 1 Roderick, SW SW Section 11-22-14, Stoney Butte, is shut down at 700 feet waiting for casing.

UTAH

The Continental Oil Co.'s No. 1 Boundary Butte, Section 22-43-22, San Juan County, southeastern Utah, is drilling at 5,485 feet in gray lime, about 185 feet below the horizon in which the last big gas was encountered. The presence of the gas pressure necessarily makes the drilling very slow and difficult. The Boulder Knoll Oil & Gas Co.'s No. 1 Endter, Section 17-34-25, which has been shut down for the past three weeks at 2,800 feet waiting for parts, is resuming. The hole is bottomed in the Moenkopi formation. The Diamond Drill Oil Co.'s No. 4, Section 16-8s-5e, Diamond Fork, Utah County, is drilling below 840 feet at which depth it reported a small show of oil. This is a test of the Wasatch formation of Tertiary age.

In Uinta County, the Colorado-Utah Oil Co. is reported to have cancelled its contract with the Western Venture Corp. for the drilling of No. 1 Spahr, Section 8-5s-21, Dog Valley Dome, and will either complete the well itself or make arrangements with some other company. The hole is bottomed at 1,418 feet, 1 foot in a sand which was said to contain some saturation but which has not been tested due to the hole caving. It has been at the present depth for several weeks. The Cisco Springs Syndicate's No. 1, Section 9-20-23, Grand County, is drilling at 1,700 feet in shale several hundred feet above the Dakota. The Utah Southern Oil Co.'s No. 1 King, Section 13-22-20, Salt Valley Dome, is still held up at 3,840 feet fishing for casing dropped in the hole when the string of 6¼-inch parted several weeks ago.

COLORADO

Interesting news from a Colorado wildcat came this week from the White Eagle Oil & Refining Co.'s No. 1-A Fordham, NW cor. SW Section 9-2s-96, on the Piceance Creek structure in Rio Blanco County. This well is a test of the Green River formation in which is found the oil shales. It has been showing gas and rainbows of oil in almost every horizon penetrated for the past 1,000 feet whenever a little sand appeared in the shale. The 10-inch casing was cemented at 2,270 feet to make a water shut-off and the plug was drilled out and it was found that a complete water shut-off had been made. A good show of gas was encountered at 2,540 feet and at 2,655 feet a bigger flow was tapped, the gas blowing the tools out of the hole and over the top of the derrick.

The hole is believed to be bottomed on top of a sand and the indications were that the well might blow itself in as a big gasser and possibly drill itself into oil as the gas was very wet. The well was immediately shut in to move back the boiler and decide upon the next step and no estimate was made as to the quantity of the gas. Joe Miller, of the Joe Miller Drilling Co., which has the contract, immediately left for Denver and A. C. Lighthall, who had blocked the acreage on the structure, was summoned from Utah to confer with the local interests. The well is being drilled under a cooperative agreement, the Midwest Refining Co., the Argo Oil Co., Snowden & McSweeny and other owners of leases and permits, contributing to the test.

Wildcats at Interesting Stages

Several of the more important of the Colorado wildcats are at interesting stages. One of these is the Texas Production Co.'s No. 1 Potter, C NE SW Section 30-2n-96, on the White River structure in Rio Blanco County, 20 miles north of the Piceance Creek test. No. 1 Potter is coring at 3,535 feet. Tests drilled on the same section in the past showed large quantities of gas, all in the Wasatch formation of Tertiary age. One of these, just to the north of Potter well, had a total of 16,000,000 feet in four sands at a depth of 2,790 feet. The Potter well, which was drilled with a rotary to get through the gas horizons, evidently is below that formation and probably feeling for sands in the Mesa Verde of the upper Cretaceous. None of the other tests drilled went through the Wasatch. The wells in the Wasatch had good shows of high grade oil.

Another of the wildcats at an interesting stage is the Midwest Refining Co.'s No. 10 Barmettlor & Clayton, NE NW Section 4-7n-86, Chimney Creek Dome, Routt County. It is headed for the Sundance sand below the Morrison and Dakotas. In the Frontier formation it had 2,000,000 feet of gas at 868 feet. This was killed and drilling continued. It topped the Dakota formation at 1,125 feet and is drilling at 1,145 feet. While it is considered doubtful if that formation will show anything of importance, it still has possibilities, but the real test will be below that horizon in the Morrison and Sundance.

Two other active operations in Routt County are both on the Tow Creek Dome south of Chimney Creek. The Texas Production Co.'s No. 2 State-Lubers, SW SE Section 7-6n-86, which is headed for the shale pay, is drilling at 1,365 feet with the 10-inch cemented at 1,265 feet, and the same company's No. 4 Belle Dennis, NE SE Section 7-6-86, which is plugging back from the granite at a total depth of 5,310 feet, is driving lead wool plug at 4,274 feet.

Retter to Resume Work

The Retter Oil Co.'s No. 1 Smith, C E half Section 14-1n-66, in Weld County, which has been idle at a total depth of 1,170 feet for more than a year, is preparing to resume. Recently the well was opened and was found to have considerable water in it. After cleaning out sediment on the bottom a small show of oil came in. Additional 10-inch casing has been ordered and it will be run to make a shutoff before drilling deeper. There is 600 feet of that size pipe in the hole at present. The objective is expected at a little below 1,700 feet. The well is being drilled by "Dad" Retter, who shuts down the operation when cash is low until he can finance some additional drilling, it being his rule to pay as he goes.

The Belmont Oil Co.'s No. 1 Maher, NE SW Section 4-6s-59, Deer Trail district, Elbert County, is drilling below 3,575 feet and had a show of oil at 3,525 feet. This operation was started with a machine as a shallow test, but has kept going for several years, the operators being encouraged by frequent shows of oil and gas in shale horizons though nothing of commercial value has as yet been encountered.

In Moffat County, Thomas McLaughlin and others' No. 1 Williams, NW SW Section 2-3n-92, a test of the fault block between the Iles and Thornburg structures, is drilling at 4,125 feet in the top of the Morrison formation, but not yet in sand. The 6¼-inch was cemented at 4,080 feet and when the plug was drilled out there was quite a nice show of gas. The McCormick Oil Co.'s No. 1-A Sales, SE SE Section 28-4n-92, is drilling at 3,010 feet. The Texas Production Co.'s No. 1 Berlin, SE NE Section 19-12n-100, Bartram Dome, in the Hiawatha district, cemented the 13⅜-inch at 1,375 feet and is waiting for the cement to harden. The Vermillion Oil & Gas Syndicate's No. 1 Marshall, SW SE Section 23-9n-100, Marshall Springs structure, is drilling at 500 feet. It will test upper sands in the Pennsylvanian at around 1,000 feet.

Parker Club Begins Again

The Parker Club, Inc., No. 1 Fee, Section 4-28-68, Badito-Alamo Dome, Huerfano County, joint with the Kinney-Coastal Oil Co., which has been idle for some time at 3,016 feet pending completion of new contract, is resuming. The 6¼-inch will be run to make a water shut-off. It is bottomed in the Niobrara shale.

The Continental Oil Co.'s No. 1 Pipe Springs, NE SE Section 27-27-49, Bent County, is drilling ahead slowly in shale at 4,671 feet with a hole full of water. The Continental is starting its No. 1 D. T. McIntyre, NE NE Section 2-19-70, in the Canon City district in Fremont County. The Midwest Refining Co.'s No. 21-X Rich, NW Section 9-6n-80, Buffalo Creek, Jackson County, cemented the 12½-inch casing at 1,563 feet for a water shut-off.

The Five Square Oil & Gas Co.'s No. 1-A State, SW cor. Section 16-4n-69, Berthoud Dome, Larimer County, in which S. H. Webber and associates recently acquired a half-interest, has been deepened 2 to 3 feet into the Muddy formation followed by an increase in both oil and gas. Total depth is 3,780 feet, and the hole is about 22 feet into the formation. It has cut about 6 to 8 feet of sand in between shale breaks and outcrops some distance away shows the horizon to be 80 feet thick. No water has been encountered and the gas has increased to 2,000,000 feet a day. While drilling the oil followed the tools out of the hole and flowed over the top, there being 4 or 5 flows in the past 10 days. Four hundred barrels of oil is in the 500-bbl. tank and additional storage will be erected. Recent tests of the oil show it to be 40 degrees gravity, or better than the Fort Collins crude. The major companies are watching the operation closely and it looks promising for the opening of a new pool.

WYOMING

One of the largest and most important oil deals which has taken place in Wyoming for some time was reported this week in the purchase by Charles E. Orchard of Denver of the holdings of the Producers & Refiners Corp. in the Oregon Basin Field in Park County. The consideration was not disclosed but it is said to have been approximately $1,000,000. In the absence of Mr. Orchard from the city the details are not known, but it is understood that approximately 2,500 acres were involved, including 880 acres in the Frisby permit in Sections 31 and 32-52-100, upon which is one well producing around 500 bbls. per day; all of Sections 29 and 30-52-100, in the Owens permit; all of Sections 15, 22 and 27-52-100; west half of Section 4-51-100; and some smaller tracts.

Mr. Orchard already owned the Rue permit comprising all of Sections 21, 22, 27 and 28-51-100, upon which there are three producing wells and one drilling well. Not all the acreage is proven territory, but a large part of it is expected to be productive. The deal makes Mr. Or-

(Continued on Page 135)

TEST SHOWS HOME OIL HAS BIGGEST WELL IN TURNER VALLEY TERRITORY

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Sept. 2.—In the Turner Valley Field, Home Oil Co.'s No. 3 received a production test which already has shown it to be the largest well in the field. The well is stated to be making around 30,000,000 feet of wet gas, with a crude naphtha recovery of 1,000 bbls. a day or more. In one 24-hour period it made 1,600 bbls. Production comes from 115 feet in the lime at about 5,138 feet. Home's No. 1 got its big production 175 feet in the lime and Home's No. 2 at 172 feet; while in the upper lime Home's No. 3 made 7,000,000 feet a day from the first gas horizon, as against 1,000,000 feet in the earlier wells. Diamond drill was used to bring the well into production, after being carried to the lime with cable tools.

Home Oil Co.'s No. 4, Section 20-19-2w5, has set 8¼-inch casing on top of the Home sands at 4,912 feet. Home Oil Co.'s No. 5, LSD 7, same section, is reported drilling below 1,330 feet. As soon as Home's No. 4 gets the lime, diamond drill will be installed to finish the test, and the cable tools will be moved to a new location for Home's No. 6. Agreement between Home Oil Co. and Imperial Oil, Ltd., called for the latter company to keep two cable outfits drilling on the Home lease till a total of six wells was reached.

Negotiations for a merger of Home Oil Co. and Calgary & Edmonton Corp. reported near completion a few weeks ago, have fallen through.

With Home's No. 3 making around 1,000 bbls. on settled production, the Turner Valley Field for September should show a production of 120,000 bbls.

Making 15,000,000 Feet of Gas

In the Central Field, Foothills Oil & Gas Co.'s No. 2, LSD 8, Section 1-20-3w5, is continuing its production test, and is reported making around 15,000,000 feet of wet gas. No official figures of crude naphtha recovery have been made public, but it is understood the hole may be deepened with diamond drill before being put into steady production.

In the Southern Field, Foothills Oil & Gas Co.'s No. 3 (Southwest Petroleum), LSD 16, Section 8-19-2w5, is reported resuming after cementing to overcome caving at 5,189 feet. This well south and west of the Home producers is testing the structure in that direction. At one time the deep lime was looked for at 4,200 feet, but shortly before the 4,000-foot mark was passed a sharp dip in the formation was encountered. Around 5,000 feet a definite marker indicated that the lime would be reached at 5,300 feet or less. At 5,170 feet lost drill rods occasioned some delay, and caving necessitated cementing back for 300 feet.

Northwest-Associated's No. 1, LSD 6, Section 20-19-2w5, is making new hole in the lime after cementing back to sidetrack lost tools. Of the remaining tests in the South Field being drilled by Imperial Oil, Ltd., Mayland Oil Co.'s No. 1, LSD 10, Section 17-19-2w5, which recently resumed with rotary tools, got the lime at 5,441 feet and is now standing cemented at 5,458 feet. If this test secures production it will extend the field approximately 1 mile further south. Mayland's No. 2, LSD 8, same section, is reported drilling around 2,175 feet. Mayland's No. 3, same section, is drilling below 2,160 feet. Lowery Petroleums' No. 1, NW Section 17-19-2w5, is drilling below 2,209 feet. Advance Oil Co.'s No. 6, LSD 16, Section 19-19-2w5, is digging cellar 90 feet north of No. 5, which was abandoned owing to casing trouble at 3,451 feet. Baltic Oils' No. 1, Section 20-19-2w5, is drilling below 2,851 feet. Sterling Pacific Oil Co.'s No. 1, LSD 15, Section 33-18-2w5, is drilling below 3,210 feet. Hargal Oils' No. 1, LSD 10, Section 20-19-2w5, is drilling below 266 feet.

Field's Deepest Well

In the Central Field, McLeod Oil Co.'s No. 4, LSD 16, Section 1-20-3w5, is drilling 1,435 feet in the lime at 5,165 feet. This hole is geologically the deepest in the Turner Valley, and in good shape to continue for a thorough test of the lower lime. McLeod Oil Co.'s No. 5, LSD 15, same section, is reported spudding in.

Calmont Oils' No. 1, LSD 2, Section

(Continued on Page 121)

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By J.C. Tippett

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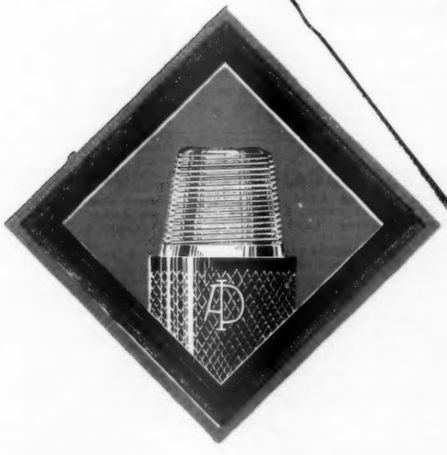

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Find Two More Good Wells at Sulphur

Gulf Coast Operations Again Featured by Active Play in Deep Sands Around Barbers Hill Dome and on South Side of Humble

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Sept. 2.—The continued active play in the deep sands around Barbers Hill dome and on the south side of Humble again featured Gulf Coast operations the last week. The addition of two more good wells at Sulphur also brought that field back into the spotlight and late in the week three new oil producers were completed at Refugio.

Geophysical exploration and leasing showed no signs of abatement. Several new leasing plays around salt domes reported recently discovered, were indicated late in the week, one in the northwestern corner of Galveston County. Union Sulphur Co. also is believed to have found another dome in Acadia Parish, 3 miles northeast of the town of Iota in Township 8s-1w. All this acreage has been taken up.

At Barber's Hill, the deep sands on the east side yielded two more good wells and late Saturday a third well, Sun Oil Co.'s No. 3 Chambers on the south side of the dome, was being completed, although at that time no estimate had been made of its production. The two new wells were Humphreys Corp.'s No. 3-H Kirby, which flowed initially at the rate of 4,320 bbls. of fluid, 30 per cent water, from sand at approximately 5,200 feet, and the same company's No. 1 Tarbutton, which came in flowing an estimated 1,600 bbls. of pipe line oil from sand around 5,222 feet.

These two wells helped put Barbers Hill's daily average production about the 20,000-bbl. mark. The continued addition of new production at this dome now is making Barbers Hill a close contender for first place among Gulf Coast Fields. Spindletop, which for years has had the greatest daily output, has been dropping off sharply the past few months with the failure to bring in any important new production there.

Humble to Test

At Humble, the chief interest at the close of the week was Humble Oil & Refining Co.'s No. 1 Glass, which was in a sand and shale showing oil at 5,010-15 feet. The 9⅝-inch casing has been cemented at 4,980 feet to test the sand. This well, which is in the H.E.&W.T. Survey No. 6, is over a quarter of a mile to the southwest around the dome from the nearest deep sand producer on the south side and is approximately a mile from the original south flank deep production of H. R. Cullen's Morris tract in the W. T. Charles Survey.

One small well was completed in Humble's south side deep production development, this being Humble Oil & Refining Co.'s No. 3 Williams, which flowed initially at the rate of 500 bbls. daily through a half-inch choke from sandy shale at 4,161 feet. This well, in the W. W. Williams Survey, is in the new district about midway between the Glass well and the original pool on the Morris tract.

Union Sulphur Co. added approximately 4,500 bbls. new production to its Sulphur Dome Field in Calcasieu Parish by the completions of its Nos. 746 and 749 Fee. The former is flowing from a sand at 4,160 feet and the latter from a shallow sand below 2,000 feet. This company also worked over its No. 725 Fee, which came in flowing an estimated 500 bbls. of oil.

The year-old oil sand at Refugio added three more producers late in the week, the best of which was Morgan Oil Corp.'s No. 1 City of Refugio, which, with a well pressure of 300 pounds, is flowing 500 bbls. daily of pipe line oil through a quarter-inch choke. Saxet Oil Co.'s No. 9 Claude Heard was swabbed in flowing 300 bbls. daily of pipe line oil through a quarter-inch choke while the Texas Gas Co.'s No. 1 Rogers, completed earlier in the week as a gasser, was flowing 350 bbls. of pipe line oil Saturday. The pressure in the latter two wells is considered too high, the Saxet well having 1,000 pounds and the Texas Gas Co.'s well 1,400 pounds. The three are producing from the 3,700-foot sand, the first at 3,666-75; the second at 3,682 feet and the last at 3,675-78 feet.

Raccoon Bend

At Raccoon Bend, Austin County, Humble Oil & Refining Co. and Valley Oil Corp. jointly completed their No. 4 Dietrichs flowing 450 bbls. of pipe line oil through a three-eighths-inch choke from sand at 3,388 feet. This followed the company's No. 2 Woodley, brought in early in the week flowing 400 bbls. at 3,448 feet.

Other completions during the week were Gulf Production Co.'s No. 29 Taylor on the southwest side of Pierce Junction, flowing 1,950 bbls. from sand at 4,761 feet; Navarro Oil Co.'s No. 4-B Cain, east side of Pierce Junction, flowing 1,000 bbls. of fluid, 80 per cent b.s. and water, from sand at 5,054 feet; Humble Oil & Refining Co.'s No. 5 Camp, DeWalt, flowing 400 bbls. pipe line oil on a three-eighths-inch choke, from sandy shale at 3,590 feet; Empire Gas & Fuel Co.'s No. 3 Groggan, Liberty, flowing 750 bbls. 3,468 feet; Gulf Production Co.'s No. 48 Phoenix, Hull, flowing 100 bbls. of fluid, 30 per cent water, 3,248 feet; Acorn Oil Co.'s No. 71 Paraffine, Batson, pumping 15 bbls., 1,143 feet; and Rio Bravo Oil Co.'s No. 79-A Cotton, Saratoga, flowing 59 bbls., 537 feet. The latter is a well drilled to a shallow sand passed up by No. 79 and being only four feet from No. 79, was drilled without the necessity of skidding either the derrick or rig.

At Damon Mound, Sinclair Oil & Gas Co. failed to find oil production in a sand at 3,900 feet. After bailing salt water, the test was abandoned. Five other failures were reported.

Marrs McLean's No. 15 Cade at High Island, Galveston County, blew in and sprayed daily about 65 bbls. of oil from sand at 4,008 feet, but it is to be deepened. At Lockport, Vacuum Oil Co. is expecting a fair well in its No. 7 Bordages, which late Saturday was bailing showing oil and gas from sand at 3,688 feet.

Vacuum Oil Co. also has picked up a shale and shell formation showing oil at a total depth of 4,339 feet in its wildcat, No. 2 DeVilbiss at Roanoke, Jefferson Davis Parish. This is the third test drilled on this dome prospect and is approximately 1,100 feet northeast of No. 1, which caused interest the early part of the year when it swabbed some oil from a sand at 4,200 feet.

Gulf Wildcat to Be Deepened

Gulf Production Co.'s wildcat at Hankamer, No. 2 Boyt, which blew out at 3,692 feet making an estimated 30,000,000 feet of gas and flowing 15,000 bbls. of salt water, is to be deepened as soon as the derrick and rig can be repaired. In the meantime, Gulf has made location for another test in this area, this being No. 1 Lee, which is about 2,600 feet south of No. 2 Boyt.

At Black Bayou, Cameron Parish, Shell Petroleum Corp.'s wildcat No. 6 Watkins, which was completed last May flowing 60 bbls. of fluid, 75 per cent b.s. and water, hourly from sand and shale at 4,727 feet, stopped flowing the past week and will be deepened. For some time the well has been flowing fairly steady at the rate of around 60 bbls. net oil. Shell has two other producers at Black Bayou, both shallow cap rock pumpers, but No. 6 is the only deep test completed.

Late in the week, Yount Lee Oil Co. was drilling plug in its No. 4 Crowley, northeast of the Jennings Field, Acadia Parish. It will test an oil sand at a total depth of 7,563 feet, the deepest oil sand ever touched on the Gulf Coast. It is on the opposite side of the dome from the same company's No. 6 Housierre-Latrielle, the coast's deepest producer to date, which was completed last June as a 2,500-bbl. well from sand at 7,388 feet and still is flowing 1,200 bbls. daily. Yount Lee Oil Co., however, still is drilling in a test deeper than either of these two, it being the company's No. 4 Chambers County on the south side of Barbers Hill which is in a hard sandy shale at 7,891 feet.

Although a substantial increase was shown in production at Barbers Hill, the daily average output of the Gulf Coast fields fell off 2,251 bbls. for the week ending August 31. This was due to further declines at Pierce Junction and Spindletop with decreases also noted in other fields. Figures for the week are:

TEXAS

Allen	12
Barbers Hill	20,212
Batson	1,339
Big Creek	3,482
Blue Ridge	2,475
Brenham	475
Boling	1,392
Clay Creek	2,300
Damon Mound	598
DeWalt	11,574
Fannette	286
Goose Creek	5,755
High Island	1,335
Hull	8,800
Humble	10,364
Jasper County	15
Lost Lake	192
Markham	376
Nash	460
North Dayton	310
Orange	2,955
Orchard	22
Pierce Junction	11,890
Port Neches	550
Refugio	4,848
Raccoon Bend	8,326
Sheeks	500
Saratoga	927
Sour Lake	2,616
S. Liberty-S. Dayton	4,920
Spindletop	24,611
West Columbia	6,343
Total Texas Coast	140,260
Week ending August 24	141,759
Decrease	1,499

SOUTH LOUISIANA

Anse La Butte	50
Bayou Boullion	120
Black Bayou	53
Dog Lake	40
Edgerly	750
Jennings	2,231
Hackberry	4,583
Lake Pelto	0
Lockport	3,198
Port Barre	195
Sorrento	87
Starks	388
Sulphur	3,975
Sweet Lake	22
Vinton	4,118
Welsh	620
Total South Louisiana	20,430
Week ending August 24	21,182
Decrease	752
Total Gulf Coast	160,690
Week ending August 24	162,941
Decrease	2,251

GULF COAST FIELDS AND WILDCATS

Week Ended August 31

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Production Co.'s No. 1 Collier (southeast)..Drlg. gumbo and lime 3,183 ft.
Mills Bennett Production Co.'s No. 1 Barber (north side)..Drlg. sand and lime 4,077 ft.
Mills Bennett Production Co.'s No. 7 Barrow (workover)..To test oil sand 4,728-43 ft.
Mills Bennett Production Co.'s No. 1 Hammon-Armstrong (workover) ..To pump 5,196 ft.
Mills Bennett Production Co.'s No. 2 Hammon-Armstrong (southeast) ..Derrick.
Humphreys Corp.'s No. 8-A Kirby, north flank ..Drlg. hard shale 5,908 ft.
Humphreys Corp.'s No. 3-H Kirby, east side ..Comp. flowing 4,320 bbls. fluid, 30 per cent water; 5,200 ft.
Humphreys Corp.'s No. 1 Tarbutton, east flank ..Comp. flowing 1,500 bbls. oil; 5,222 ft.
D. B. McDaniels' No. 1 Woodward (southeast) ..Drlg. sandy lime 4,740 ft.
D. B. McDaniels' No. 2 Woodward (southeast) ..Drlg. hard lime 4,980 ft.
Republic Prod. Co.'s No. 2 Kirby (southeast) ..Drlg. sand and lime 4,330 ft.
Rexal Oil Co.'s No. 3 McLean, east flank ..Drlg. lime 4,945 ft.
Rexal Oil Co.'s No. 1 Cockburn, east flank ..Failed to flow and shut down; sand at 5,207 ft.
Sinclair Oil & Gas Co.'s No. 1 McKinney (southeast) ..Drlg. shale and lime 2,340 ft.
Sinclair Oil & Gas Co.'s No. 1 Wilburn (southeast) ..Drlg. gumbo and boulders 1,800 ft.
Sun Oil Co.'s No. 3 Chambers, south flank ..Set screen 4,665 ft.; to test.
Sun Oil Co.'s No. 1 McKinney (southeast) ..Drlg. gumbo and lime 4,505 ft.
Sun Oil Co.'s No. 2 McKinney (southeast) ..Drlg. sand and shale 2,481 ft.
Sun Oil Co.'s No. 1 Wilburn (southeast)..Drlg. gumbo and lime 3,562 ft.
Superior Oil Corp.'s No. 1 Hooks-Collier, southeast ..Derrick.
Superior Oil Corp.'s No. 2 Hooks-Collier, southeast ..Location.
The Texas Company's No. 1 Wilburn (southeast) ..Location.
Yount Lee Oil Co.'s No. 4 Chambers, southwest ..Drlg. hard sandy shale 7,89[illegible] ft.
Yount Lee Oil Co.'s No. 3 Chambers, south ..Drlg. sandy lime 2,041 ft.
Yount Lee Oil Co.'s No. 1 Kirby, southeast ..Drlg. hard sand 6,231 ft.
Yount Lee Oil Co.'s No. 1 Woodward (southeast) ..Drlg. sand 5,088 ft.
Yount Lee Oil Co.'s No. 2 Woodward (southeast) ..Drlg. gumbo 1,420 ft.
Yount Lee Oil Co.'s No. 3 Woodward (southeast) ..Derrick.

BOLING—FORT BEND AND WHARTON

Sun Oil Co.'s No. 8 E. C. Farmer ..To test cap rock for sulphur 1,329 ft.
The Texas Company's No. 2 Pleasants, northwest ..Drlg. sticky shale and lime 4,260 ft.
Vacuum Oil Co.'s No. 3 Taylor, south side ..Bailed dry; sand 3,940 ft.; pulling screen to deepen.

RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 5 Hardy ..Drlg. shale 3,772 ft.
Humble & Valley's No. 2 Buchanan ..Pumping 100 bbls. oil; 3,414 ft.
Humble Oil & Refining Co.'s No. 2-B Mitchell ..Drlg. sandy shale 3,365 ft.
Humble & Valley's No. 3 Mitchell ..Rig.
Humble & Valley's No. 1-B Walton ..Pumping 50 bbls. oil 3,452 ft.
Humble & Valley's No. 4 Walton ..Cemented casing to test oil sand 3,102 ft.
Humble & Valley's No. 5 Walton ..Derrick.
Humble & Valley's No. 4 Dietrichs ..Comp. flowing 450 bbls. oil 3,388 ft.
Humble & Valley's No. 5-A Deitrichs ..Drlg. sand rock 928 ft.
Humble & Valley's No. 1 Jackson ..Cemented casing to test oil sand 3,484 ft.
Humble & Valley's No. 2 Jackson ..Drlg. 1,210 ft.

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Deeper Production Found in Richland

Hope Production Well, Dry at 2,450 and 2,500 Feet, Continues Drilling and at 2,934 Feet Shows for 5,000,000 Feet of Gas

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Sept. 2.—Discovery of deeper production in Richland ments in the Swartz area of the Monroe Field in Ouachita Parish may lead to developments that will upset preconceived ideas as to the future of those two gas fields, particularly in the case of Richland. Hope Production Co.'s No. 1 Eubanks in the SE NW Section 26-17-6, a half-mile north and approximately a mile east of nearest production in the northeast corner of proven Richland territory was dry in the 2,450-foot horizon and got the same result on a second test at 2,500 feet, but continued drilling. Early in the week a drill stem test of 8 feet of white sand at 2,926-34 feet showed for 5,000,000 feet of gas and 4½-inch was set at 2,920 feet for a test. Below the sand there was 5 feet of gumbo. The total depth of the hole is 2,942 feet.

This show was 475 feet lower than production usually is obtained but stratigraphically the hole is deeper. The discovery started geologists arguing all over again besides quickening interest in Richland but one authority who has devoted most of his time to Richland places the show in the upper members of the Trinity. Trinity production in the Cotton Valley district of Webster Parish ranges from around 4,200 to 4,800 feet. The Hope company made location this week for No. 1 Hemler in the NE NE Section 11-16-6 and the Palmer Corp. tested 2,000,000 feet of gas and shut down for orders on No. 1 Louisiana Petroleum Co. in Section 22-17-6, after pulling liner and cleaning out preparatory to going deeper from 2,478 feet. At that depth the well was completed in September, 1927, by Louisiana Petroleum Co. as a 5,000,000-foot gasser. In this same section S. R. Humble's No. 1 Binion & Sartor, 1,320 feet southwest of the Palmer well, tested 3,000,000 feet of gas at 2,481 feet with a little salt water and is waiting orders.

The cause of excitement in Monroe was Magnolia Petroleum Co.'s No. 2 Fee 404 in Section 15-19-5, Ouachita Parish, in which sand topped at 2,304 feet showed 9,000,000 feet of gas on a drill stem test at that level, the same amount it had tested in the older horizon at 2,282-94 feet. On bailing it gauged 11,880,000 feet at 1,040 pounds. The company's No. 5 U. S. in Section 29-31-5, in Morehouse Parish, was dry at 2,296 feet and is coring, and No. 4 U. S., Section 20-19-5 Ouachita Parish, was dry at 2,410 feet and was coring at 2,462 feet.

Two Completions in Monroe

Two completions in the Monroe district this week were Ark-La Pipe Line Co.'s No. 2 McEnery, Section 21-19-4, Ouachita Parish, 3,700,000 feet of gas at 2,190 feet, and Haynes Oil Co.'s No. 1 Dixie Land Co., Section 17-17-2 Ouachita, location abandoned.

Bahan & Bahan have interested Memphis capital in their operations in Monroe and will drill a dozen or so wells on as many small tracts they have in the Spencer Dome area where last week they got a good producer. Also, they have a big block in T-22-3 which must be drilled this year and they have tentative location for the well in Section 33-22-4, southwest of Natural Gas Producing Co.'s Tensas 15, Section 4-22-4 Ouachita, which extended production a mile and a half northeast.

Play to the northwest of proven area in this part of the district is expected the coming winter, from between the extension well just mentioned and older producing territory southwest in Ouachita and Union Counties. Some time ago two wells far northwest of a line between these two points found the Monroe gas rock high, but did not test it.

Three dry holes were reported from the Dixie district of Caddo Parish. Haynes Brothers' No. 1 Oden in the NE NW Section 19-19-14, a short distance west of production, was abandoned as a dry hole at 2,500 feet after getting a small show of oil at 2,425 feet. Ohio Oil Co.'s No. 3 Hunter, NW NE Section 17-19-14, the discovery section, was dry at 2,433 feet after a small show at 2,415 feet, and No. 5 Hunter in the NE NW same section tested salt water at 2,510 feet. The Texas Company bought 157 acres, the E½ SE Section 8-19-14, and the remainder in the SW of Section 9-17-14 and has derrick up for No. 1 Hunter in the SE cor. Section 8. Simplex Oil Co.'s No. 1 Dickson, Section 33-20-14, northeast of the Dixie district, was abandoned on account of salt water at 2,702 feet. Gulf Refining Co.'s No. 18-2 Levee Board, Section 34-21-16, was completed at 1,823 feet pumping 855 bbls.

Palmer Corp.'s No. 1 Roos, Section 23-17-12 Elm Grove—Sligo district of Bossier Parish, gauged 667,440 feet of gas total depth 1,722 feet and No. 1 Thigpen & Herold, Section 11-17-12, recently taken over, with acreage, from the Triangle Drilling Co., made 1,000,000 feet at 230 pounds, total depth 883 feet.

Jones Chemical Co. of Detroit, which has been operating an experimental plant at Elm Grove for the extraction of iodine and other constituents of brines in that area, has location for No. 3 Fee in Section 32-16-11 which it will drill for salt water. What the experiments thus far have developed is not being given out.

Deepest Show in North Louisiana

Dixie Oil Co. made another test on its deep hole in Pine Island, No. 92 Dillon, Section 13-21-15, and got 150,000 feet of gas, total depth 6 351 feet after cementing a cavity at 6,106-19 feet, and shut down for orders. So far this is the deepest show obtained in a north Louisiana well. The company will not close its headquarters here and move to Tulsa October 1 as indicated in an announcement in July. Inability to obtain the offices in will occupy in October has delayed the move until about November 1. Land, production and sales department offices will be maintained here after the transfer.

Standard Oil Co. of Louisiana is checking Amerada Petroleum Co.'s production in the Haynesville district of Claiborne Parish preparatory to taking it over. Amerada has three 40's with 8 wells, making a total of 158 bbls. per day. Triangle Drilling Co. is reported planning another deep test on its 8,000-acre Sugar Creek block, location probably to be in the NE cor. Section 7-19-5.

Two completions in the Urania district of La Salle Parish had 45 bbls. initial production. Air Lift Co.'s No. 2 Mo.P. R.R., Section 26-10-1e, pumped 30 bbls. from 1,534 feet and G. W. Zoder completed No. 3 King, Section 13-10-1e, making 15 bbls., total depth 1,515 feet. Ohio Oil Co.'s No. 44 Bodcaw, Section 28-21-10 Cotton Valley district of Webster Parish, gauged 11,555,000 feet of gas at 1,575 pounds from 5 feet of sand, total depth 4,689 feet. Because of the high pressures encountered in these deep Trinity wells Palmer Corp. has decided to use hydraulic rotary rigs in the future, retaining the old style draw works.

Four wells due for a test in the Zwolle area of Sabine Parish will make that part of the country interesting within the next month. Meanwhile the two producers maintain their slow but steady increase in production. R. L. Gay's No. 2 Bowman-Hicks, Section 14-7-14, completed in December, 1928, making 50 bbls. initial from 2,130 feet, is now flowing more than 120 bbls. daily and No. 3, same lease and section, which started off in May with 10 bbls. from 2,178 feet, is flowing 62 bbls. Bridges-Clark Oil Co.'s No. 1 Williams, Section 33-10-12, Pleasant Hill district, completed August 10, making 2,000 bbls. from 3,215 feet, is down to 625 bbls.

Two Strippers in Waskom Field

Two strippers were completed in the Waskom gas field of Harrison County, Texas. Nick Barbare's No. 17 Furrh, Joel Lipscomb Survey, yielded 1,000,000 feet of gas at 2,367 feet and C. H. Lyons and others' No. 1-A Furrh in the same survey gave the same amount of gas from 2,380 feet.

Gulf Refining Co. is drilling blue shale with streaks of lime at 6,272 feet on No. 1 Carraway in the G. H. Patterson Sur-

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WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

NORTH LOUISIANA

BIENVILLE PARISH

Company, farm and location— Remarks:
W. G. Gray's No. 1 Snyder, SW NE, Sec. 15-17-6 ..... Drlg. brown shale 3,260 ft.

BOSSIER PARISH

Corbett et als' No. 1 Murff, SE cor. NE, Sec. 18-17-11 ... S.D. 990 ft.
Nell & Lanier's No. 1 Biedenharn, SE cor., Sec. 23-21-14. S.D. 790 ft.
Walker et als' No. 1 Antrim, NW cor. SE, Sec. 28-22-13.. Drilled 4 ft. deeper; bailed dry. T.D. 3,021 ft; S.D.
Woodmansee et als' No. 1 Bollinger, SE cor. NE, Sec. 9-22-11 ..... S.D. waiting orders 3,532 ft.

CADDO PARISH

D. C. R. Oil Co.'s No. 2 Oden, 892 ft. W, 264 ft. S, NE cor. NE NW, Sec. 20-19-14 ..... S.O.; tested dry 2,445 ft; S.D: W. O. 2,550 ft.
Lide et als' No. 1 Levee Board, 200 ft. S, 200 ft. W, NE cor., Sec. 24-19-15 ..... Drlg. 875 ft.
Fred McWilliams' No. 1 Oden, 1,650 ft. S, 330 ft. W, NE cor., Sec. 20-19-14 ..... Rig up.
S. T. Oynett, trustee's No. 1 Dixon, SW cor., Sec. 10-19-14. S.D. for fuel; T.D. 1,906 ft.
I. N. Pharis, trustee's No. 1 Oden, NE cor. SE NE, Sec. 19-19-14 ..... Spudded Aug. 22; cmtd. 10-in. 80 ft; drlg. 500 ft.
Lide et als' No. 1 Hunter, 200 ft. S, 200 ft. E, NW cor., Sec. 22-19-14 ..... Drlg. 2,028 ft.
R. W. Norton's No. 1 Hill, 630 ft. N, 1,260 ft. W, SE cor. NE, Sec. 33-23-16 ..... Cmtd. 15½-in. 500 ft; drlg. 750 ft.
A. H. Tarver's No. 1 Glassell & Dickson, 300 ft. N, 300 ft. E, SW cor., Sec. 31-20-14 ..... Tested S.W. 2,470 ft; plugging back; W.O.
Woodley Pet. Co.'s No. 1-B Knight, Sec. 11-15-12 ..... Arranging to deepen; T.D. 1,936 ft.

CATAHOULA PARISH

Lochnager Pet. Co.'s No. 1 Taliaferro, 572 ft. E, 396 ft. S, C, Sec. 26-9-6 ..... S.D. 900 ft.

CLAIBORNE PARISH

Nesbit et als' No. 1 Mosley, 330 ft. S, 330 ft. E, NW cor., Sec. 29-20-5 ..... Top chalk 2,027 ft; drlg. shale 2,200 ft.
El Dorado Chief Oil Co.'s No. 1 Dance, C SW NE, Sec. 27-20-7 ..... Drlg. 1,200 ft.

DESOTO PARISH

P. J. Becker, trustee's No. 1 Tull, SW cor. NE NE, Sec. 23-12-15 ..... Fishing 7 joints drill stem; T.D. 2,475 ft.

(Continued on Page 98)

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

BOSSIER PARISH—CARTERVILLE

Company, farm and location— Remarks:
Delaware-Louisiana Dev. Co.'s No. 4 Bollinger, Sec. 35-23-11 ..... Swbd. little mud and oil 2,150 ft; W.O.S.R.; T.D. 3,923 ft.

BOSSIER—BELLEVUE

H. L. Morgan et als' No. 1 Wetherbee, 200 ft. S, 200 ft. W, NE cor. SW SE, Sec. 21-19-11 ..... Coring 1,462 ft.

BOSSIER—ELM GROVE

Ark.-La. P. L. Co.'s (Ark. Nat. Gas Corp.) No. 5-B Van Hoose, Sec. 36-16-12 ..... Cmtd. 10-in. 187 ft; drlg. 1,510 ft.
Jones Chemical Co.'s No. 3 fee, 400 ft. N, 400 ft. W, SE cor. NW NE, Sec. 32-16-11 ..... Location.
J. F. Palmer's No. 4 McCann, Sec. 21-16-11 ..... S.D. 1,910 ft.
Palmer Corp.'s No. 1 Roscoe, 660 ft. S, 660 ft. E, NW cor. NE NW, Sec. 14-17-12 ..... Location.

CADDO PARISH—MOORINGSPORT

Falcon Oil Co.'s No. 1 Nunley, 3,212 ft. N, 5,591 ft. E, SW cor., Sec. 29-20-15 ..... W.O.S.R.; 2,326 ft.
C. B. Moore's No. 1 Buckalew, 2,000 ft. N, 1,000 ft. W, SE cor., Sec. 30-20-15 ..... Rigging up.

CADDO PARISH—DIXIE

Gold & Sklar's No. 3 Hunter, 330 ft. N, 300 ft. E, SW cor. SW NE, Sec. 17-19-14 ..... Derrick.
Gold & Sklar's No. 4 Hunter, 330 ft. N, 300 ft. W, SE cor. SW NE, Sec. 17-19-14 ..... Location.
Gulf Ref. Co.'s No. 3 Hunter, 300 ft. S, 300 ft. W, NE cor., Sec. 17-19-14 ..... Began drlg. Aug. 27; drlg. 50 ft
Ohio Oil Co.'s No. 4 Hunter, 330 ft. N and W, SE cor. NW NE, Sec. 17-19-14 ..... Derrick.
Standard Oil Co.'s No. 3 Henderson, 220 ft. N, 330 ft. W, SE cor. SW SE, Sec. 7-19-14 ..... Derrick.
Standard Oil Co.'s No. 1 School, 330 ft. S, 330 ft. E, NW cor., Sec. 16-19-14 ..... Began drlg. Aug. 25; cmtd. 10-in. 100 ft; drlg. 350 ft.
The Texas Co.'s No. 1 Hunter, SE cor., Sec. 8-19-14 ..... Location.

CADDO PARISH—OIL CITY

W. D. Chew's No. 5 fee, Sec. 33-21-16 ..... Cmtng. bottom; T.D. 2,306 ft.
W. D. Chew's No. 1-C Levee Board, 2,490 ft. W, 1,470 ft. S. NE cor., Sec. 34-21-16 ..... W.O.S.R. 1,826 ft.
W. D. Chew's No. 2-C Levee Board, 2,490 ft. W, 1,473 ft. S, NE cor., Sec. 34-21-16 ..... W.O.S.R; 400 ft. oil in hole; T.D. 932 ft.

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Penn Opens New Spot in Luling Area

Well Started at 960 Bbls. in 22 Hours. Oil Well in Bee County 40 Miles From Other Production

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Sept. 2.—R. R. Penn's No. 1 Manford in the James Hodges Survey in Guadalupe County southwest of the city of Luling came in Wednesday of last week and in nine hours produced 960 bbls. at total depth of 2,418 feet. Mission Drilling Co.'s No. 3 Ray, in Goliad County, 3 miles east of Pettus, came in the same day producing at the rate of 250 bbls. of oil a day at 4,063 feet, through 2½-inch tubing. These two facts and indications that the gentleman's agreement in the Darst Creek area in Guadalupe County to keep the lid on is about to blow up, made the past week a remarkable one in Southwest Texas. Both the Penn's No. 1 Manford in Guadalupe and the Mission Drilling Co.'s No. 3 Ray in Goliad County are wildcats and the difference in amount of production between the two wells is no measure of the importance of the two.

Another feature of the week was the beginning of the work of stringing pipe for a 12-inch 15-mile gas pipe line from the Agua Dulce Field in western Nueces County, to a connection with the Magnolia Gas Co.'s gas line at Orange Grove in northeastern Jim Wells County. The 15-mile line is being laid by the Moody-Seagraves interests. The Magnolia line is complete and the first gas was run through it last week (Thursday) and extends from the Mirando district to San Antonio with a carrying capacity of 125,000,000 feet. Moody-Seagraves through the Agua Dulce Oil & Gas Co. has six wells completed in the 2,000-foot sand in the Agua Dulce Field in western Nueces County and has made seven new locations and is starting three new tests at once. The new 15-mile line will be completed within 30 days. It will be the first line out of the field.

R. R. Penn's No. 1 Manford

Going back to the two new oil strikes in Southwest Texas, the R. R. Penn test was reported in The Oil and Gas Journal a couple of weeks ago when it blew in and ran wild for several days. Bottom of the hole is in Taylor marl, as far as anyone knows, and the most accepted theory is that it ran into a cavity in the fault plane. The well is around a 2,500-bbl. initial producer. As this is being written the test is on a quarter-inch choke and making 15 bbls. an hour, or 360 bbls. a day. On a half-inch choke it made 760 bbls. a day. This well is 4 miles southwest of the city of Luling and the same distance southwest of the Joe Bruner Field and is 6 miles northeast of the Darst Creek Pool where there are two producing wells. It is just a little to the southeast of a straight line drawn from the Darst Creek to the Joe Bruner Field but probably on the same structure though production may not be developed solidly between it and the two fields.

Pettus Oil Pool

H. E. Hewitt, early in the year at Pettus in northeast Bee County, drilled No. 1 Ray to about 2,875 feet and got a gas well. Mission Drilling Co. (three-fourths owned by Moody-Seagraves) bought the property and drilled No. 2 Ray, 600 feet north of No. 1, and got 30,000,000 feet of gas at 2,890 feet. It then drilled No. 3 Ray, 3 miles to the east and over the line in Goliad County and failed to get, or did not develop, the 2,890-foot gas sand and at 4,053-62 feet got an oil sand. The well came in last week producing at the rate of 250 bbls. a day of oil 44.7 gravity. It was brought in through 2½-inch tubing and the swabbing process was slow. Later it bridged in the tubing and it had to be all pulled out and brought in again. At last reports late in the week it was still not back on production but should be early this week.

Around the Mission Drilling Co.'s test there is not likely to be any offsets very soon. Some tests are being started in that part of the country but they have little to do with No. 3 Ray. The feature of No. 3 Ray is that with the exception of No. 2 Ray, a gas well, 3 miles west and in a different sand, it is a wildcat 30 to 40 miles from any important production. The Refugio Field is 40 miles southeast. The Houston Oil Co.'s Cartwright gas field is about 35 miles distant, a little west of south. Shallow gas and oil production at Three Rivers and Calliham is 30 miles west and the new Darst Creek Field in Guadalupe is 65 miles north. It opens up an entirely new oil region and will increase wildcat activity all up and down that part of the State. The territory is close to the edge of the area mapped and reported on a few years ago by Thomas L. Bailey in a bulletin on the Gueydan formation issued by the University of Texas.

Guadalupe County

Around R. R. Penn's No. 1 Manford and in the Darst Creek Field in Guadalupe, there is to be come active drilling at once. Sun Oil Co. paid $10,000 cash for a lease on the 32.5 acres due east of the Penn well, the tract being the north half of the 65-acre tract out of the M. Wade 112-acre tract in the James Hodges Survey. Sun Oil Co. has made a location 300 feet east of the Penn well and will start drilling at once. Cranfill & Reynolds acquired a one-twenty-fourth royalty in the Appling 127-acre tract in the James Hodges Survey paying $138,000 of which part was cash and part in stock of their company. There will probably be a number of tests started around the Penn well soon. Magnolia Petroleum has made a location in the 96-acre Appling tract northwest from Penn's well.

In the Darst Creek Field, The Texas Company is taking 400 bbls. of oil a day from its two wells, which at this time are the only producers in the pool but the expectation is that drilling will be started by other lease-holding companies at once. The Humble Oil & Refining Co. seems to be making preparations to that end at this time. Four miles southeast of the Darst Creek discovery well, A. G. Keiffer, who had a show of gas some weeks ago, has resumed drilling in his No. 1 B. B. Dix and is below 1,550 feet and southwest of him Grayburg Oil Co.'s No. 1 Wells in the G. LeBaume Survey, is rigging up. Grayburg has a spread of some 2,400 acres in this tract. Grayburg s No. 1 Tegler, in Wilson County, 20 miles southwest, cored the Midway at 2,290 feet and is drilling below 2,300 feet and is thought to be running somewhat high.

Laredo District

Trapshooter Reilly Oil & Royalties Co. cored 9 feet into sand at 3,076 feet in his No. 2 Benavides in the south part of the Carolina-Texas Field, Webb County. He has set casing and should drill in this week. The core was saturated with oil. This test is a quarter mile west of his No. 1 which was a small well at about the same depth. His No. 1 extended the field a half mile south and so far as the 3,000-foot sand was concerned extended it three-quarters of a mile south. Reilly set 6⅝-inch casing at 3,066 feet and will probably drill in the coming week.

In this same field the Carolina-Texas Oil & Gas Co. abandoned at 2,640 feet the No. 8 Benavides up in the center of the field. It had been announced the company would make it a deep test going deeper than anything drilled thus far in the field. It had a showing of oil at 2,135 feet in a sand common in the field.

Schoolfield O'Byrne

S. & O. Oil Corp. last week completed No. 4 Bowe on the west edge of the field. good for 75 bbls. of oil in sand at 2,306 feet. This is rather interesting since it is a quarter of a mile west of production, the nearest production east of it being a gas well and with small oil wells and gas wells lined up between it and the better production to the east.

In Duval County in the area north of the Cole gas field, Humble Oil & Refining Co.'s No. 30 Kohler, in the northwest corner of Survey 169, is an 85-bbl. well. 3 feet in sand at 1,767 feet. This is the fourth oil well the company has brought in at about the same depth along the east edge of a line of gas producers.

Sun Oil Co.'s No. 2 Lopez, in Survey 730, 2 miles southwest of the Humble's five oil wells in Surveys, 400, 405 and 165, is dry and abandoned at 2,900 feet. It is the Sun's second attempt to pick up the line of the Humble's production and extend it southwest. Sun Oil and E. H. Buckner are rigging up in the southwest corner of survey 161, 2 miles east and 1 mile south of the above mentioned oil wells and an east offset to a Humble gasser at 1,747 feet.

SOUTHWEST TEXAS

	Bbls.
Branyon	25
Bruner	45,844
Dale	453
Darst Creek	1,200
Kingsville	465
Larremore	180
Luling	13,396
Lytton Springs	986
McMullen County	38
Medina County	32
Mirando	10,460
Somerset	1,762
Yoast	1,220
Total	76,041
Week ending August 24	74,386
Increase	1,655

Humble Field—Duval

Humble Oil & Refining Co.'s No. 22 Kohler, Survey 395, located 495 feet west line, 165 feet north line, at 1,854-78 feet, showing oil, gas and salt water; No. 30 Kohler, Survey 169, located 165 feet north and west lines, 1,760 feet, placing on pump; No. 33 Kohler, Survey 164, located 330 feet north and west lines, at 317 feet set 10-inch casing; No. 34 Kohler, Survey 396, located 330 feet east and south lines, at 325 feet, set 10-inch casing. Sun Oil Co.'s No. 1 Peters, Survey 161, located 495 feet west line, 165 feet south line, is rigging up; No. 2 Lopez, Survey 730, located 1,000 feet south line. 150 feet east line, at 2,720 feet, drilling.

Piedras-Pintas Dome

Suladie-Peters-Jack's No. 1 Walsh, Survey 185, located 800 feet west line, 900 feet south lines, location.

Schoolfield-O'Byrne Field

C. E. Long's (Shell) No. 1 C. W. Hahl, Survey 280, Block 24, located 150 feet north line, 750 feet east line, rigging up. Magnolia Petroleum Co.'s No. 6 Hahl, Survey 250, Block 24, at 2,319 feet, cleaning out; No. 7 Hahl, Survey 250, Block 24, located 150 feet east line, 750 feet north line, derrick; No. 7-B Hahl, Survey 61, located 650 feet south line, 2,950 feet east line, at 5,125 feet, drilling.

Randado Field—Jim Hogg

Randado Oil Corp.'s No. 35 Palacious, Survey 291, Block 2, located 150 feet south line, 450 feet east line, at 100 feet, is standing.

Henne-Winch-Fariss Field

George S. Marshall's No. 4 Holbein, Survey 11, Block 10, Share 3, located 150 feet south and west lines, has derrick up; No. 5 Holbein, Share 3, Block

(Continued on Page 128)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ARANSAS COUNTY

United North & South Dev. Co.'s No. 1 Kate Edwards, Lewis Sur. ..... Coring sand 1,598 ft.

ATASCOSA COUNTY

Tom Draper's No. 1 McCoy, Sur. 234 ..... Location.
Amphion Oil Co.'s No. 1 Sam Schlisser ..... Shut down 2,300 ft.; repairing rig.

BASTROP COUNTY

Gulf Production Co.'s No. 2 Bell, Riley Sur. ..... Location.
Humble O. & R. Co.'s No. 1-A Wolfenbarger, S. Wolfenbarger Sur. ..... Location.
Jim Harper and others' No. 1 R. R. Mitchell ..... Moving in.
Howell Oil Corp.'s No. 1 F. Wichman ..... Fishing 1,995 ft.
Nelson et al's No. 2 Rundus, 100 ft. N of No 1. ..... Drlg. 1,800 ft.
Hadley Oil Co.'s No. 1 F. Kiel, R. H. Grimes Sur., 150 ft. E line, 1,000 ft. S line ..... Location.
E. W. Ogden's No. 1 Goodman ..... Drlg. 2,540 ft.
Pacific Oil & Gas Co.'s No. 1 Darnell & Bickler, Martha Baker Sur. ..... Shut down.
Pacific Oil & Gas Co.'s No. 1 Spooner, Leverenz Sur. ..... Drlg. 2,420 ft.
Moore & Ortman's No. 1 Ortman, Andrew Graham Sur. ..... Location.
Superior Oil Co.'s No. 1 R. J. Moore, J. Raines Sur. ..... Location.

BEXAR COUNTY

Balcones Oil Corp.'s No. 1 F. A. Jackle ..... Temp. abnd., may deepen.
Guy S. Fisher's No. 1 S. L. Beck, P. W. Hays Sur. ..... Drlg. 200 ft.
Hamilton & Kennon's No. 1 Hamilton, near Gas Ridge ..... Drlg. 1,475 ft.
Moore-Jauer's No. 1 Holly R. Ellison ..... Drlg. 1,705 ft.
Mrs. A. R. Garrett's No. 1 Ponciano Pena ..... Abandoned 1,005 ft. in Taylor marl.
O. J. Le Compte's No. 3 R. Diaz, J. M. Urrigas Sur. ..... Location.
Leon Oil Co.'s No. 1 Reiniger, 300 ft. E line, 215 ft. S line ..... Location.
E. G. Potter's No. 1 Watson, B. Martinez Sur. ..... Repairing rig 2,118 ft.

BLANCO COUNTY

J. Bekning's No. 1 Butler, Butler Sur. ..... Moving in machinery.
J. E. Forbes and others' No. 1 Bruckner ..... Drlg. 1,030 ft.
Ashe & Marshall's No. 1, 5 mi. S Johnson City ..... Spudded in.

BROOKS COUNTY

Milam Drlg. Co.'s No. 6 Reilly Allen, SW part of county ..... Formation test; drlg.
A. W. Dinn's No. 1-B Garcia ..... Shut down 450 ft.
Houston Oil Co. of Texas' No. 1 Lassiter, Survey 69 ..... Standing 3,500 ft., contract depth; waiting orders.

CALDWELL COUNTY

Cranfill & Reynolds' No. 1 Berensdorf, A. Floyd Sur. ..... Location.
Cranfill & Reynolds' No. 2 Dauchy ..... Drlg. 1,872 ft.
W. H. Harper's No. 3 Thomas, J. Roberts Sur. ..... Moving in machinery.
H. C. Ratcliff's No. 1 J. E. Cardwell, J. P. Bell Survey ..... Spudded in.
John T. Callahan and others' No. 1 W. Ellison ..... Drlg. 2,540 ft.
J. S. Brutsche's No. 1, R. L. Quinn Sur. ..... Location.

COLORADO COUNTY

Cagle-Concord Oil Co.'s No. 1, Sec. 42 ..... Spudded in.

(Continued on Page 125)

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Relief Expected From California Law

Operators Working on Comprehensive Plan for Handling and Distributing Gas Produced Under the New Regulations

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Aug. 31.—Technically California's gas conservation law becomes effective at midnight tonight but it will probably be another week or two before initial enforcement steps are undertaken as state officials have not yet completed the vast amount of preliminary work necessary. The initial attempt to eliminate waste of natural gas will be centered in the Santa Fe Springs, Long Beach, Ventura Avenue and Seal Beach Fields as these districts are responsible for most of the surplus gas which is being blown into the air at the present time.

State officials charged with enforcement of the new conservation law have been advised by practically every major company that they will co-operate to the fullest extent and every effort made to facilitate early enforcement. A number of progressive operators have been working on a comprehensive plan to handle gas production and distribution and if this organization meets with approval it will go a long way towards stabilizing conditions and at the same time permit maximum production of crude oil. It is interesting to note in this connection that R. D. Bush, state oil and gas supervisor, recently sent a circular letter to all producers, lessors and lessees in the four fields mentioned calling attention to Section 8 of the new gas act which states that "Whenever the state oil and gas supervisor shall find that it is in the interest of the protection of oil or gas from unreasonable waste, it is declared to be lawful for the lessor, lessee, operator or other persons, firms and corporations owning or controlling royalty or other interests in the separate properties of the same producing or prospective oil or gas field to enter with approval of the state oil and gas supervisor into agreements for the purpose of bringing about the co-operative development and operation of all or a part or parts of such field as a unit or for the purpose of fixing the time, location and manner of drilling and operating wells for the production of oil or gas, or providing for the return of natural gas into the subsurface of the earth for the purpose of storage or the repressuring of an oil or gas field. Any such agreement shall bind the successors and assigns of the parties thereto in the land affected thereby and shall be enforceable in an action for specific performance."

Outline of New Plan

The plan sponsored by progressive operators was recently submitted to the state oil and gas supervisor for consideration and it is understood that he is inclined to approve it in principle subject to the working out of operating details. It is proposed that the amount of natural gas sold to the various gas companies shall be taken pro rata from all producers but that the companies having contracts shall receive the payment for such gas in accordance with the terms of their contract as though their own gas had been delivered thereunder. All gas in the field used for fuel or other operative purposes shall be taken pro rata from all the operators in that field in order to equalize production conditions and thus permit an equitable production of crude oil.

It is also suggested that all gas used for repressuring in the field from which the gas is produced shall be taken pro rata from all the operators in said field who shall contribute pro rata to the cost of injection of the gas. This is on the theory that each of the contributors will have a pro rata opportunity to recapture this gas when the time comes for its recovery.

Arrangements are being made whereby natural gas will be removed from prolific fields and stored in distant reservoirs located in other areas. If this can be worked out it is understood that the natural gas so stored in distant reservoirs will be taken pro rata from the producers and without charge to the producers for injection or transportation. This gas, when recaptured or recovered, will belong to the operators contributing toward the cost of injection subject to such arrangements as can be made with the owner of the reservoir. The term pro rata has been defined as meaning the proportion which the producer's maximum potential production of natural gas limited by a maximum oil and gas ratio to be determined later bears to the total potential production of the field under the same limitation. The fundamental principle of the above plan is that every one shall have an equal pro rata opportunity to make physical disposition of the gas so that no one will be obliged to blow natural gas into the air or curtail his oil production in disproportion to his neighbors.

May Be Modified

This proposal submitted by a group of companies having contracts for the sale of natural gas and ample facilities for repressuring is in process of being modified in some details. What these changes are or in what manner they will affect the plan as a whole will not be made known for several days. This revamping of the section under discussion will be finished as quickly as possible and in the meantime enforcement work will be delayed as the State is quite anxious to afford all operators an equal opportunity to become parties to the general mutual agreement proposed as a means of alleviating existing conditions. In other words, the State would like to have producers take care of their own problems if possible.

A number of small operators and independent producers are decidedly opposed to the suggested plan for handling surplus production of natural gas, especially that part which provides that no payment will be made for natural gas delivered to various gas companies and applied on existing contracts. It is the writer's opinion that this provision will ultimately be modfied so as to provide payment for the pro rata gas delivered to public utilities for commercial consumption. It is also probable that some change will be made in determining the individual quota of natural gas to be used for repressuring or transportation from one field to another.

New Well in Kettleman

The Continental Oil Co.'s No. 8, in Section 12 of the North Dome in the Kettleman Hills Field of Kings County, which was originally started by the Marland Oil Co. as an offset to the Milham Exploration Co.'s discovery, No. 1 Elliott, blew in under control a few days ago doing approximately 50,000,000 feet of natural gas and 3,500 bbls. of crude oil daily but five hours after completion a gasket in the cellar blew out and the well was practically running wild. High pressure pumps were immediately rigged up and control work is now under way with a good prospect of success within the next day or two. No oil or gas is coming out of the christmas tree but several hundred barrels of crude oil are being salvaged daily back of a hastily constructed pump. This well is one of four projects permitted to be completed in conformity with the Kettleman Hills agreement in an effort to reduce the tremendous gas pressure shown by the Milham's discovery well. The Standard finished the first offset to the Milham's discovery several weeks ago and should have another potential producer completed soon.

The agreement contemplates a complete shutdown if this can be done with safety but, if no reduction in gas pressure is affected in the Milham's discovery this entire group of wells will be permitted to produce indefinitely and a portion of the net proceeds pro rated among operators holding adjacent acreage which might be adversely affected because of possible drainage.

Daily production at Santa Fe Springs showed a substantial drop this week due to a smaller number of completions and a heavy natural decline in the Buckbee and O'Connell zones. There are 244 projects headed down to the deep horizons in this field at present, more than one-half of which are rotating below the 6,000-foot level. This work will continue to be an important factor for perhaps another year if the gas conservation law is successful as this measure will regulate production and prevent the usual abnormal decline which results from unregulated development.

July Production Increased

Crude oil production in California during July showed an increase over June production, the total for July being 26,796,627 bbls., an average of 864,407 bbls. per day. This represents an increase of 43,586 bbls. per day over June. Refiners and pipe line companies are continuing to add to stocks of crude and refined oils and they are looking forward eagerly to the relief which they feel will come from the new gas conservation law now going into effect.

Stocks of crude and refined oils held in Pacific Coast territory increased 3,890,740 bbls. during July, heavy crude and refinery residuum increasing 1,784,482 bbls., and light refinable crude 1,326,482 bbls. Gasoline increased 425,107 bbls. and naphtha distillates, tops, were reduced 101,835 bbls. All other stocks, which includes kerosene, medicinal oils, asphalt and other refined products, were 456,504 bbls. greater than at the close of June.

Completions in the Santa Fe Springs Field during the last week were not as numerous as in the previous week. The General Petroleum Corp. completed its No. 111 Jalk, doing 2,400 bbls. of clean 33.2 gravity oil from a depth of 7,961 feet, and followed this into production with No. 179-F Santa Fe Community, which was completed at a depth of 6,940 feet doing 3,000 bbls. of clean 33.5 gravity oil. This company also recompleted its No. 232 Santa Fe from a depth of 7,472 feet flowing 1,648 bbls. of 32.9 gravity oil, which was clean.

The Shell Oil Corp. recompleted its No. 1-B Slusher at 6,840 feet and this well was returned to production flowing 877 bbls. of 31.7 gravity oil which was not very clean. It is, however, gradually cleaning up.

The Richfield Oil Co. cleaned out and recompleted its No. 1 G. P. and the well was returned to production a few days ago flowing 2,200 bbls. daily from the O'Connell zone at 6,959 feet. This well was completed originally about a week ago but it bridged over and after being cleaned out it showed increased production. Reid & Berliner finished No. 1 Reiber but the well will be killed and deepened. It was completed at 7,686 feet flowing 1,500 bbls. of 34.7 gravity oil. The Standard Oil Co. completed No. 7 Jordan flowing 3,200 bbls. of 32.8 gravity oil from 7,971 feet. It is reported also that this well will be killed and deepened and oil string run in.

The Standard also completed No. 6 Johnson, which was good for 1,500 bbls. of 32.2 gravity oil from a depth of 8,050 feet. The Union Oil Co. returned its No. 16 Alexander to production flowing 1,476 bbls. of 31.9 gravity oil after being redrilled and deepened to 6,882 feet. Oscar Howard has accomplished a water shut off in his No. 7 Hathaway, 6⅝-inch pipe being set at 7,950 feet. This well has created interest owing to the fact that this is a Hathaway zone well and it had such a kick when the water was shut off that the crew had to turn all pipes and pump against the pressure. High pressure in that low zone indicates a good well.

Rosecrans

Two wells were completed in the Rosecrans Field of Los Angeles Basin during the last week. The Barnsdall Oil Co. completed its No. 3-A doing 200 bbls. of 39.2 gravity oil and 6,500,000 feet of gas

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	997,250	2,646,947
Fuel oil	.....	.....	.....	.....	49,950	111,621
Diesel and gas oil	.....	.....	.....	.....	1,210,934	1,463,764
Gasoline	320,507	45,787	254,564	36,366	13,807,355	9,384,396
Naphtha distillate	.....	.....	.....	.....	81,750	259,600
Coastwise—						
Crude oil	831,219	118,746	814,441	116,349	17,501,525	16,382,164
Fuel oil	178,838	25,548	311,885	44,555	13,628,838	11,473,033
Diesel and gas oil	11,502	1,643	7,336	1,048	775,890	771,903
Gasoline	169,257	24,180	342,409	48,916	7,508,804	5,869,243
Kerosene	.....	.....	14,464	2,066	62,619	52,884
Naphtha distillate	.....	.....	.....	.....	.....	171,566
Exports—						
Crude oil	62,500	8,929	188,908	26,987	3,884,256	1,515,207
Fuel oil	285,234	40,748	231,487	33,070	12,417,221	15,670,000
Diesel and gas oil	177,159	25,308	33,150	7,736	1,834,765	1,797,387
Gasoline	390,751	55,822	368,538	52,648	7,934,389	4,644,227
Kerosene	15,500	2,214	199,475	28,496	2,230,691	2,738,144

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	.....	342,425
Gasoline	77,823	11,118	81,050	11,579	1,505,375	1,357,567
Lubricants	.....	.....	69,534	9,933	138,709	277,151
Coastwise—						
Fuel oil	.....	.....	45,160	6,451	1,832,413	2,641,719
Diesel and gas oil	.....	.....	7,560	1,080	342,313	241,157
Gasoline	.....	.....	248,157	35,451	3,444,526	3,240,877
Kerosene	.....	.....	.....	.....	96,996	163,795
Exports—						
Crude oil	.....	.....	.....	.....	121,503	85,935
Fuel oil	73,059	10,437	.....	.....	602,370	1,744,069
Diesel and gas oil	47,711	6,816	.....	.....	261,565	10,400
Gasoline	228,927	32,704	.....	.....	3,945,797	3,175,994
Kerosene	19,280	2,754	.....	.....	406,730	392,263
Lubricants	2,600	371	.....	.....	25,713	11,400

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daily from a depth of 5,840 feet. The Union Oil Co. completed its No. 11 Rosecrans flowing 800 bbls. of 36.7 gravity oil daily from 5,615 feet. The Union's No. 10 Rosecrans is standing cemented at 5,861 feet and No. 15 Howard Park is idle at 7,016 feet. There were no new completions in the Dominguez, Huntington Beach or Long Beach Fields although Carl Maier's No. 2 Olson was recompleted and returned to production doing 140 bbls. of 28.5 gravity oil daily from a depth of 6,817 feet. The eastern end of the Long Beach Field should take on further activity owing to the favorable showings found in the Petroleum Syndicate's well. About 150 feet of rich oil sand was cored from 6,735 to 6,885 feet and a 6⅝-inch combination string has been run in for a test of these showings.

In the Potrero Field the Cypress Petroleum Corp. showed a rich-looking sand in its No. 1 DeKock at 4,847 feet. George F. Getty's No. 1 Potrero is drilling ahead in a gray sandy shale at 2,720 feet, and C. S. Blinn has cemented the stovepipe in his No. 1 well at 1,006 feet. After producing at the rate of 125 bbls. of oil daily for the last two months, Max Pray's No. 1 Gascho has sanded up at 3,831 feet. The well is being cleaned out and it is expected will be returned to production within a short time.

The Associated Oil Co. is recementing its No. 1 Potrero at 5,125 feet as the last test showed it to be wet. This well has been recemented about 12 times. The San Patricio Oil Co. has reached a depth of 5,435 feet in its No. 1 Connolly in this field, the formation showing a brown shale with streaks of gray sand.

Elwood

There is activity up on the tide lands offsetting the Elwood Field where the Pacific Western, Bankline Oil Co. and Elwood Exploration are all constructing piers or in the process of drilling. The Pacific Western is well on the way to the Vaqueros sand in Permit No. 92 at 2,107 feet. The Barnsdall and Rio Grande are offsetting these wells. Permit No. 88 of the Barnsdall-Rio Grande combination is drilling in a sticky formation below 1,519 feet, according to last reports. This is one of five permits to be drilled by these interests along the surf. No. 5 Doty of the Barnsdall Oil Co. is reported to have lost circulation when trouble developed in the casing but after circulating oil drilling was resumed at 5,208 feet.

The General Petroleum's No. 1 More, located about 4 miles southeast of the Elwood Field, has been killed after pumping mud into the hole for about two weeks. It is still showing a little gas, however. This well blew in making 60,000,000 feet of gas then dropped off to 10,000,000 feet and eventually made about 15 bbls. of light gravity oil. No attempt will be made to straighten out the hole at present but it is likely that the company will drill another well in this vicinity soon as the General Petroleum, Pacific Western and Barnsdall are attempting to pick up new production in the Sespe formation.

The Olympic Oil & Refining Co.'s No. 1 Lomas, 3 miles west of Santa Barbara, has been returned to production doing approximately 390 bbls. of oil per day from a depth of 2,195 feet. This well originally was completed doing about 1,000 bbls. a day but was shut in owing to lack of storage facilities when the drilling campaign became lively in that area. When the General Petroleum Corp. took over the Olympic's 200 acres the well failed to come in and it was idle for a few weeks. It was cleaned out, however, and started to flow again. The Olympic's No. 1 Knott did not meet with any success in its deep test and has been suspended at 2,520 feet. The California Oil Properties Co. has material on ground for a test well on the Stephens property in Section 3-4-28.

Santa Maria District

In the old Santa Maria district, near Orcutt in Santa Barbara County, the System Oil Co. is making a production test this week in its No. 1 Bradley in Section 36-10-34 at 4,280 feet. The well is in a fine saturated oil sand. The Shell Oil Corp. is continuing its shallow hole operations in the Betteravia district with a view to determining structural conditions in the Santa Maria Valley, which is an area of extent and as yet no structures have been found within its limits.

The Wildcat Oil Co. is making a test east of Betteravia, north of Purisima Hills, its No. 1 in Section 20-10-35 drilling ahead at present at 1,435 feet in a hard sand. On the coast south of Surf in the Lompoc area, the Keystone Oil Co. has good indications below the 2,000-foot level in its No. 1. The Gaviota Oil Co. has started a test in this same area, its No. 1 Lompoc drilling ahead at 740 feet. The Standard Oil Co.'s No. 1 Sudden at Point Arguello and L. P. O'Neill's No. 1 Orena are two other San Luis Obispo County wildcats located respectively in the Lompoc and Santa Maria quadrangles. The Latin American Oil Co. has taken over the old Welsh & Campbell well about 10 miles east of the Shandon in the Cholame Valley. This well will be carried down below the present depth of 3,000 feet.

Monterey County is in the limelight this week owing to the three tests being made by the Standard, Union and Shell companies west of the Salinas River. These tests are all to be classed as wildcats but the success of any one would open up areas of consequence and start a trend of operations in that direction. The Shell made a production test on its San Ardo well, No. 1 Dudley, in Section 15-22-9, this test being made merely to determine absolutely the nonproductiveness of a gas sand obtained at about 3,500 feet. The present depth of the well is 3,765 feet. The Standard Oil Co.'s No. 1 Piedmont in Section 23-22-7 is down 225 feet and the Union Oil Co.'s No. 1 Paige in Section 8-22-8 has reached a depth of 1,560 feet.

Ventura

There were no new completions in the Ventura Avenue Field this week but drilling activities were brisk and indications are that several completions will be checked up soon. The Associated Oil Co. will probably complete No. 58 Lloyd soon as it is down 7,082 feet with very good showings. No. 2 Foster of the M.K.&T. Oil Co. has been flowing by heads from 7,396 feet and the company may deepen this well. The Shell Oil Co. has been swabbing in its No. 33 Gosnell at 7,381 feet but it refuses to flow. The Penn-Kan Oil Co. effected a shut off on the 5-inch at 7,470 feet and is now drilling ahead in the oil sand at 7,576 feet.

The Rincon Field, located on the western extremity of the Ventura Avenue anticline, is still quiet, the Elmer Oil Co. drilling ahead in its No. 1 at 5,565 feet, while the Richfield Oil Co.'s No. 1 Hobson fee is flowing by heads, the well being down 7,449 feet.

Midway-Sunset

Several new wells were started out in the Maricopa Flats section of the Midway-Sunset Field the past week. The Rio Grande Oil Co. is making progress in its No. 1 Leutholtz in Section 22-11-23, and the California Western Oil Co. is testing for gas in its No. 1 on the Havenstrite lease in Section 17-11-23, at 3,171 feet. The California Western is building rig for No. 2 Havenstrite. The Doyle Petroleum has a rig going up for No. 3 on the Weir lease in Section 8-11-23, its No. 2 making good progress at 2,260 feet. The Signal Oil & Gas Co. has temporarily suspended drilling in its No. 4 at 3,260 feet, while No. 5 is drilling ahead at 1,360 feet. Both these wells are on the Sheehan lease. Chanslor-Canfield Midway Oil Co. is making headway in its No. 8 in Section 7-32-23 at 3,002 feet, and the Cypress Petroleum Co. is standing recemented at 5,191 feet in its No. 15 in Section 22-32-23. The Shell Oil Co. is drilling out the cement in its No. 1-A on the Perris lease in Section 15-32-23 at 6,741 feet. The Standard Oil Co. is running in 9-inch casing and will set at 6,356 feet, in its Mascot well in Section 26-32-23. The well is now down 6,378 feet.

Drilling operations in the Mount Poso Field of Kern County have been active the last week. Much interest has been occasioned by the finding of oil sand in the Gerard & Phillips No. 1 well in Section 32-27-29, at 1,395 feet. The well is down 1,415 feet and the 12½-inch casing set at 1,494 feet. Bruce Frame has rerun the liner in his No. 1 Bowles well to 1,591 feet and is bailing clean oil and some water. The hole is down 1,591 feet with 12½-inch casing set at 1,494 feet. This well is in Section 21-26-28.

(Continued on Page 121)

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S-T-R	Depth	Status
Standard, No. 5-9 Saticoy, Ventura Co.	10- 2-22	7,617	gr. sd. drilling
American Oil Co., No. 1 Camarillo, Ventura Co.	33- 2-20	1,210	cleaning out
Bolsa Chica, No. 1-A Temescal, Ventura Co.	4- 4-18	760	br. sh. drilling
Associated, No. 1 Rincon, Ventura Co.	19- 4-24	....	grading
Miley, E. J., No. 2 Red Mountain, Ventura Co.	7- 3-23	1,690	hd. sd. drilling
Shell, No. 1 Simi, Ventura Co.	31- 3-17	3,596	coring
Continental, No. 1 Sulphur Mountain, Ventura Co.	21- 4-22	3,765	suspended
Continental, No. 2 Sulphur Mountain, Ventura Co.	22- 4-22	6,740	suspended
Continental, No. 3 Sulphur Mountain, Ventura Co.	21- 4-22	2,280	standing, cmtd.
Lockwood Oil Co., Well No. 1, Ventura Co.	28- 8-21	290	sd. sh. drilling
Milham Explin., No. 1-A Buttonwillow, Kern Co.	8-28-23	4,662	gas well, idle
Milham Explin., No. 2 Buttonwillow, Kern Co.	8-28-23	2,730	gas well, idle
Milham Explin., No. 3 Buttonwillow, Kern Co.	8-28-23	2,694	gas well, idle
Milham Explin., No. 4 Buttonwillow, Kern Co.	6-28-23	2,670	gas well, idle
Milham Explin., No. 5 Buttonwillow, Kern Co.	5-28-23	2,500	gas well, idle
Milham Explin., No. 6 Buttonwillow, Kern Co.	8-28-23	2,676	gas well, idle
Milham Explin., No. 7 Buttonwillow, Kern Co.	6-28-23	2,720	suspended
Milham Explin., No. 8-A Buttonwillow, Kern Co.	8-28-23	2,673	gas well, idle
Milham Explin., No. 9 Buttonwillow, Kern Co.	8-28-23	2,400	deep test
Milham Explin., No. 10 Buttonwillow, Kern Co.	8-28-23	2,672	suspended
Lincoln Drlg. Co., No. 1 Buttonwillow, Kern Co.	6-28-23	190	suspended
Richfield Oil Co., No. 2 Semitropic, Kern Co.	36-27-23	7,618	suspended
Elmer Oil Co., No. 1 Bena, Kern Co.	15-30-30	3,000	resume work
Elmer Oil Co., No. 1-A Rosedale, Kern Co.	33-29-26	4,040	sd. sh. drilling
Taft Drlg. Co., No. 1 Union Avenue, Kern Co.	2-30-27	4,595	suspended
The Texas Company, No. 1 Edison, Kern Co.	23-29-29	....	grading
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	1,460	bl. sh. drilling
Heyd, Frank, No. 1 Edison, Kern Co.	26-29-28	....	material
Shell Oil Co., No. 1 Lerdo, Kern Co.	5-29-27	4,190	recemented
General Pet., No. 1 McFarland, Kern Co.	25-26-25	6,100	br. sh. drilling
Union, No. 2 San Emidio, Kern Co.	5-10-21	3,670	suspended
Currency Pet. Co., No. 1 Jacalitos, Fresno Co.	28-21-14	2,302	rebuild rig
Currency Pet. Co., No. 2 Jacalitos, Fresno Co.	14-21-14	350	suspended
Hornaday & Huggins, No. 1 Kerman, Fresno Co.	32-14-18	4,060	sd. sh. drilling
Shell Oil Co., No. 2 Westhaven, Fresno Co.	26-19-18	2,850	coring
Shell, No. 7 Westhaven, Fresno Co.	6-20-18	1,750	survey hole
Cates Oil Co., No. 1 Joaquin Ridge, Fresno Co.	7-19-15	114	suspended
Oceanside Oil Co., No. 1 Kraffenhagan, Fresno Co.	33-22-17	738	suspended
Petroleum Securities, No. 1 Huron, Fresno Co.	20-20-16	695	suspended
Petroleum Securities, No. 2 Huron, Fresno Co.	28-20-16	5,490	sd. sh. drilling
Rio Grande, No. 1 Kerman, Fresno Co.	14-13-17	....	location
Pismo Dome Oil Co., No. 1 Pismo, San Luis Obispo Co.	5-32-13	1,130	cleaning out
Union, No. 1 Huasna, San Luis Obispo Co.	34-32-15	3,750	br. sh. drilling
Union, No. 1 North Huasna, San Luis Obispo Co.	12-32-14	3,925	br. sh. drilling
Midwest Refining Co., No. 1 Huasna, San Luis Obispo Co.	34-31-15	2,025	fishing
Panorama Oil Co., Well No. 1, San Luis Obispo Co.	7-31-21	4,019	fishing
Paso Robles Synd., No. 1 Paso Robles, San Luis Obispo Co.	27-27-11	2,842	br. sh. drilling
Shell, No. 5 Guadalupe, Santa Barbara Co.	36-10-35	2,321	hd. sd. drilling
Shell, No. 6 Guadalupe, Santa Barbara Co.	25-10-35	470	sd. drilling
Petroleum Securities, No. 1 Goleta, Santa Barbara Co.	.....	4,290	br. sh. drilling
Union, No. 1 Buel Canyon, Santa Barbara Co.	X- 7-31	1,806	br. sh. drilling
O'Neil, L. B., No. 1 Los Alamos, Santa Barbara Co.	26- 8-33	3,265	sd. sh. drilling
Western Gulf, No. 1 Gaviota, Santa Barbara Co.	X- 5-33	3,612	sd. sh. drilling
Richfield, No. 1 Point Conception, Santa Barbara Co.	X- 5-35	....	location
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	2,428	idle, litigation
Standard, No. 1 Point Arguello, Santa Barbara Co.	35- 6-36	620	sd. sh. drilling
Gaviota Oil Co., No. 1 Lompoc, Santa Barbara Co.	9- 7-35	740	sd. drilling
Barnsdall, No. 3 Goleta, Santa Barbara Co.	1- 4-30	2,518	sd. sh. drilling
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	well killed
General Pet., No. 1 Orella, Santa Barbara Co.	5- 4-30	588	sd. sh. drilling
Shell, No. 1 Orella, Santa Barbara Co.	36- 5-31	5,660	coring
Pacific Western, No. 1 Naples, Santa Barbara Co.	7- 4-29	3,960	cleaning out
System Oil Co., No. 1 Orcutt, Santa Barbara Co.	36-10-34	4,280	set pipe
Keystone Oil Co., No. 1 Santa Maria, Santa Barbara Co.	33-10-34	2,416	sd. sh. drilling
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	1,620	hd. sd. drilling
Keystone Oil Co., No. 1 Surf, Santa Barbara Co.	18- 7-35	2,420	sd. sh. drilling
Channel Oil Co., Well No. 1, Santa Barbara Co.	29- 4-27	6,304	suspended
Channel Oil Co., No. 1 Fellowship, Santa Barbara Co.	29- 4-27	1,795	sespe, drilling
Pacific Western, No. 1 Gilbratar, Santa Barbara Co.	14- 5-27	....	grading
Continental, No. 1 Carpenteria, Santa Barbara Co.	33- 4-25	4,130	gas well
Continental, No. 2 Carpenteria, Santa Barbara Co.	33- 4-25	4,580	rebuild rig
Colusa Oil Co., Well No. 1, Colusa Co.	31-15- 4	625	hd. sd. drilling
North Counties Oil Co., Well No. 2, Humboldt Co.	36- 2- 1	2,205	suspended
Humboldt Oil Co., Well No. 1, Humboldt Co.	6- 2- 1	3,041	suspended
Applegate & Renshaw, Well No. 1, Merced Co.	24- 6-10	3,750	suspended
Kuhns, H. L., Well No. 1, Merced Co.	8-12-19	660	suspended
Foster & Hammil, Well No. 1, Alameda Co.	21- 3- 3	1,148	hd. sd. drilling
Calhoma Oil Co., No. 1 Livermore, Alameda Co.	9- 3- 3	1,549	suspended
Shell, No. 1 Dudley, Monterey Co.	15-22- 9	3,765	cleaning out
Union, No. 1 San Lucas, Monterey Co.	8-22- 8	1,560	fishing
Standard, No. 1 King City, Monterey Co.	23-22- 7	516	sd. sh. drilling
Marland, No. 1 Bradley, Monterey Co.	32-24-11	5,955	suspended
Tuck Oil Co., No. 1 Los Gatos, Santa Clara Co.	15- 8- 1	852	suspended
Pet. Sec., No. 1 Rich Grove, Tulare Co.	22-24-27	1,711	hd. sd. drilling
Dudley Ridge Synd., No. 1 Tulare, Kings Co.	12-23-19	1,305	gas, shut in
Porter, H. B., No. 1 Devils Den, Kings Co.	9-24-17	710	hd. sd. drilling
O'Donnell, J. E., No. 1 Tulare, Kings Co.	7-23-20	Rig	suspended
Associates Pet., No. 1 Lewis Creek, San Benito Co.	5-19-10	501	suspended
Twin States Oil Co., No. 1 Soldani, Mendocino Co.	14-12- 7	725	hd. sd. drilling

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

The Texas Co., No. 1 Clearwater, Los Angeles Co.	8- 4-12	4,932	gr. sd. drilling
Standard, No. 1 Hawthorne, Los Angeles Co.	5- 3-14	6,955	gr. sd. drilling
Hummel, Joseph, No. 1 Redondo, Los Angeles Co.	28- 3-14	....	location
Ohio Oil Co., No. 1 Del Rey, Los Angeles Co.	21- 2-15	4,065	hd. sd. drilling
Jackson, R. W., No. 1 Whittier, Los Angeles Co.	19- 2-11	1,449	recemented
Burlingham Pet. Co., No. 1 Compton, Los Angeles Co.	17- 3-13	2,204	suspended
Lee & Brainerd, No. 1 Rosecrans, Los Angeles Co.	17- 3-13	Rig	suspended
Johnson, D. W., No. 1 Compton, Los Angeles Co.	21- 3-13	....	foundation
Hanners, George, No. 1 Watts, Los Angeles Co.	8- 3-13	Rig	idle
Jackson, R. B., No. 1 Watts, Los Angeles Co.	8- 3-13	Rig	suspended
Cal. Well Drlg. Co., No. 1 Compton, Los Angeles Co.	11- 4-13	8,078	sandy shale
Hansen, N. J., No. 1 Watson, Los Angeles Co.	17- 4-13	Rig	suspended
Pugh Miller Drlg. Co., No. 1 Calabasas, Los Angeles Co.	6- 1-17	2,550	suspended
Russell Oil Co., No. 2 Joughin, Los Angeles Co.	23- 3-17	2,025	gr. sh. drilling
Pomona Oil Co., Well No. 1, Los Angeles Co.	32- 1- 8	1,220	set pipe
Anchor Oil Co., No. 1 Puente, Los Angeles Co.	19- 2-10	4,820	suspended
Rucker, R. C., No. 1 Puente, Los Angeles Co.	27- 2-10	2,180	gr. sd. drilling
Urmi Oil Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	775	redrilling
Prairie Oil Co., No. 1 Montebello, Los Angeles Co.	32- 1-12	5,315	gr. sd. drilling
Monterey Park, No. 1 Jepson, Los Angeles Co.	25- 1-12	5,195	gr. sd. drilling
West, L. M., No. 1 El Monte, Los Angeles Co.	16- 1-11	633	set casing
Union Oil Co., No. 1 Richfield, Los Angeles Co.	13- 3- 9	820	hd. sd. drilling
Southwestern Drlg. Co., No. 1 Richfield, Los Angeles Co.	21- 3- 9	5,777	cleaning out
Superior Oil Co., No. 1 Atwood, Los Angeles Co.	4- 4- 9	Mtl.	building rig
Queen, J. M., No. 1 Newhall, Los Angeles Co.	22- 3-16	230	suspended
Anderson, P. B., No. 1 Hasley Canyon, Los Angeles Co.	1- 3-16	567	oil sand
So. California Drlg. Co., No. 1 Newhall, Los Angeles Co.	13- 3-16	1,384	cemented
Shell, No. 1 Coyote, Orange Co.	28- 3-10	5,090	hd. sd. drilling
Beard, G. F., No. 1 Brea Canyon, Orange Co.	30- 2- 9	930	suspended
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,895	suspended
Oil Well Eng. Co., No. 1 Newport, Orange Co.	21- 6-10	2,805	cemented
Hall Pet. Co., No. 1-A Murrietta, Riverside Co.	23- 7- 3	Rig	suspended
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,398	hd. sd. drilling
Imperial Valley Oil Co., Well No. 1, Imperial Co.	32-11-10	2,980	suspended
Davenport Oil & Gas Co., No. 1 San Marcos, San Diego Co.	30-12- 8	847	suspended
Turner, S. S., No. 1 Escondido, San Diego Co.	25-12- 2	2,045	sd. sh. drilling

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Story of a Record Breaking Shot

Two Thousand Quarts of Nitroglycerin Exploded in a Well in Stephens County, Texas, and What Happened as a Result

By L. E. Bredberg

"Nine thirty-six is zero hour."

This bit of news quietly issued by the person in charge did not cause a general shifting up and down some trench, and the fingering of stacking swivel or safety locks and bolts, and the examination of cartridge belts and gas masks, as it might have 11 years ago in the front line trenches of France when every doughboy was on his toes, seething with internal fires of an unknown origin, and ready to "hop off" at the signal from his officer, not knowing what the next few hours would bring, how far he would go, and whether or not he would live to tell of his part played in the coming engagement, which would without a doubt send many of his best buddies "west," if not himself.

But the news did cause a hasty reach for all time pieces in the small party waiting in suspense for a far greater explosion than that caused by any high explosive that swiftly roared its way from the rear of its own lines over the heads of its proteges in the trenches below, and beyond into the trenches of its enemies where it wreaked havoc and destruction, blotting out the lives of many humans in a great upheaval of earth and concrete reinforcements.

Every man in the party scrutinized his watch carefully, asking others what time they had, and if his was a little fast or slow would synchronize the time with that of one near him.

As the minutes slowly ground around, seeming like hours, the watchers sitting on the shinnery and boulder-strewn hillside gave vent to their feelings, and as usual under stress of great excitement talked rapidly and loudly, punctuating the quiet country atmosphere with raucous laughter now and then as some member of the party made some wise crack in regard to what might or might not happen, or what some friend in the party, or himself, might or might not do at the crucial moment.

The Movies on the Job

Moving picture cameras had long since been set for "shots," and smaller cameras were held in hand, or set between the feet of their owners, ready for instant use. Some of the party had picked friendly looking boulders, and others chose nearby trees back of which to dodge in case cover became a necessity, because of flying timbers, tools and rocks.

Men fidgeted continuously, and innumerable cigarets either added to those in the "singing" class or ones afraid of coughing at such a nerve-racking period of suspense, and no man would have "walked a mile" just then for his favorite brand for fear of missing out on the big thrill.

At 9:34 every man in charge of a movie camera jumped up to peer through the finder, to make last minute adjustments, and grasp the cranking handles. Those with the small cameras also looked over the mechanics, and leveled down on the "target," to be sure that they could draw a "bead" in a flash, and press the bulbs and thereby record the results of one of the greatest, if not the greatest, nitroglycerin shots ever set off in a well, in the history of the oil industry.

The Earth Trembles

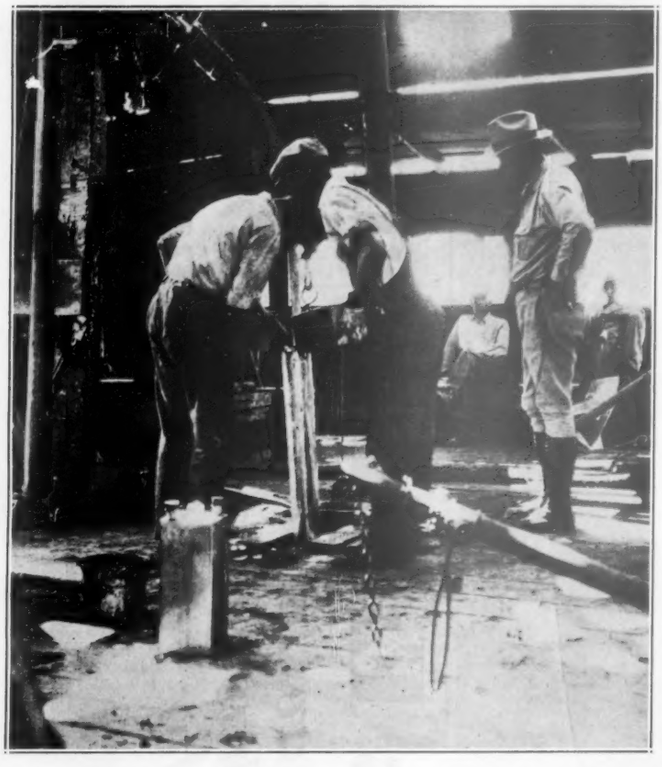
The Zero Hour bomb performed its task at the set time; thereby detonating 2,000 quarts of nitroglycerin in the hole 3,180 feet underground, but the immediate results were vastly disappointing to the frayed-nerved camera men, and the weary watchers were unrewarded for their lengthy vigil. A great explosion was heard, and the earth trembled for a few seconds, but practically everyone called the shot a "dud" due to the fact that it did not cause a wild stampede for distance and shelter from flying debris from the well. Nothing happened above the surface.

After a few minutes' wait, the more intrepid of the watchers, and the tool dressers and drillers, and owners of the well, slowly walked down the hill for a quick inspection at the derrick floor. Orders were given to light the fire under the boiler to build up steam, and resume operations, and in a short time the tools were running down the hole ready to ascertain just what the shot had accomplished. It was generally thought that the hole had bridged, and that the tools would soon prove whether or not this presumption was true.

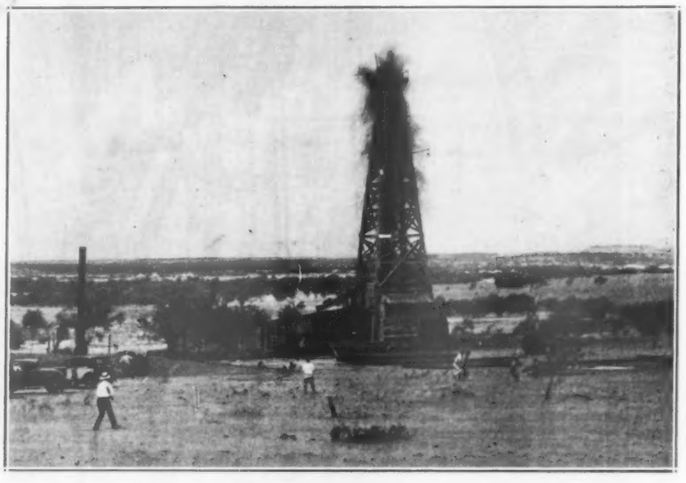
Breaking Down the Bridge

In about an hour's time the jarring of the 6-inch bit on the bridge began wearing it down, and disintegrating the tightly compact particles of mud, slush and limestone, and a sharp crackling and booming caused every man on the derrick floor to be ready to take off up the hill to shelter. The crackling sound represented fluid of some kind in the hole, and the booming presaged the appearance of stored-up gas and pressure, and after a few more licks with the tools things began to happen. The driller started the tools

(Continued on Page 129)



Al. E. Rapp, president of the United States Torpedo Co., who supervised the loading and shooting of the well. He is seen here preparing the Zero Hour time bomb which detonated the 2,000 quarts of nitroglycerin.



Picture showing drill stem blown above crown block.

"Torpedo Bill" pouring the "soup."

3099 feet in thirty 24-hour days

without a single shut down

THAT was the experience of Mead Brothers, Inc., drilling contractors, with a rotary rig . . . 6-inch drill stem . . . powered by Waukesha. They used three of the first Waukesha Great Six Engines ever built . . . two for the drive of two 7¼ in. x 18 in. mud hogs and the third on the draw works.

Operating on natural gas, fuel consumption averaged 51,150 cu. ft. per 24-hour day . . . about one-fourth the fuel required by the usual steam outfit. This was so remarkably low that the field engineers, observing the test, questioned the gas meters and were satisfied only after installing accurately calibrated meters.

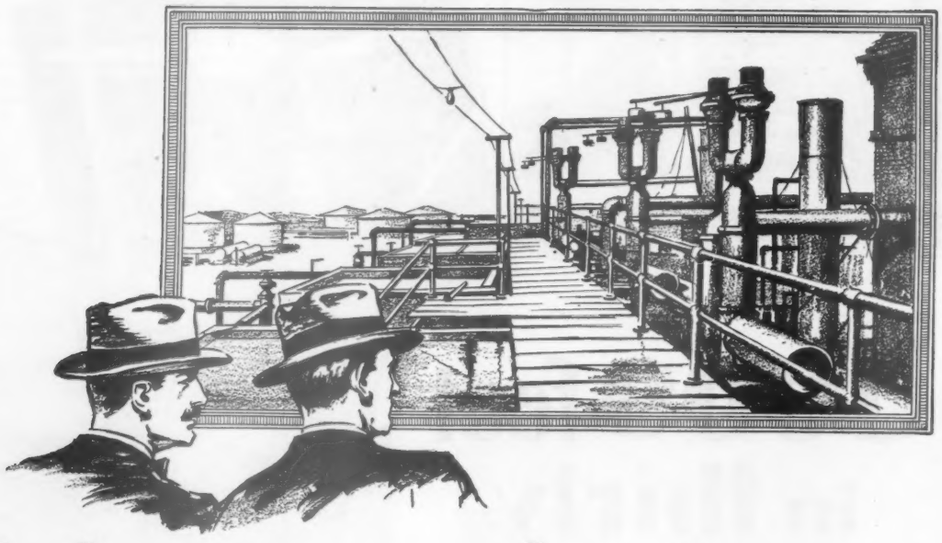
Two weeks after completing the first well, Mead Brothers sent in a repeat order for a second outfit of three Waukesha Great Six Engines. This *proved* engine can be adapted to *your* rotary rig. Write today to *Oil Industry Equipment Division, Waukesha Motor Company, Waukesha, Wisconsin. Offices: 8 W. 40th Street, New York City; C. F. Camp Co., Tulsa; Portable Rig Co., Houston; 7 Front Street, San Francisco.*

You are invited to visit our booth located at spaces 89, 90, 121 and 122 Oklahoma Building during the International Petroleum Exposition.

968

WAUKESHA ENGINES

"STERLING SECTIONS



will fit most any box,"

SAID THE ENGINEER

"THEY are so convenient," said a very prominent consulting refinery engineer recently in speaking of Sterling Sections. "We can fit most any sort of a box our client may have; we can make a layout to meet any of the varied requirements of modern refineries and they go in so easily."

He might have added, besides convenience, they are cheaply installed, long of life—being cast from ARCO METAL, a corrosion-resisting iron, economical of space, efficient and rugged.

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Let our engineers show you how Sterling Sections may also be a convenience to you and give you greater condensing capacity without additional boxes.

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Work Active in Central West Fields

Operators Want as Many Wells as Possible on the Pump Before Winter Comes. Thirty Strings of Tools Going In Dupo Area

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Sept. 2.—Work remains active in most divisions of the Central West Field as operators are anxious to get as many wells on the pump as possible before cold weather comes. Central Ohio and Illinois lead in development work. In the Dupo Field in Sugar Loaf Township, St. Clair County, more than 30 strings of tools are going, many on town lots. Central Ohio is active.

The old Lima Field of northwestern Ohio has a few fair completions. In Wood County, Freedom Township, the Home Banking Co.'s second well on the H. G. Foos farm (on the oil map the L. Kahler farm) in the SE Section 13, pumped an initial of 25 bbls. at a total depth of 1,281 feet, or 51 feet in the Trenton. No. 3, same farm, is drilling. August Bushman and others abandoned No. 1 Henry Moenter farm, Section 27, also No. 1 on the E. Seiving, Section 21, same township. In the old Prairie Depot Field of Montgomery Township, the Ohio Oil Co. abandoned No. 40 on the big Holliday and Hamilton farm, Section 16. George W. Hoffman and others are starting No. 5 on the Mary Reitzel, Section 23, Perrysburg Township, while in Lake Township, Lantz and others are drilling No. 2 F. L. Stone, Section 32, also drilling No. 2 on the Simon Achenberger, same township.

In Hancock County, Liberty Township, L. Cramer's No. 2 on the John Shank, Section 32, produced 25 bbls. initial, and N. Harpset is drilling a test on the M. F. Volweiler, Section 29, same township. Star & Clark are starting No. 14 on the Alice Stauffer, Section 6, Eagle Township.

Sandusky County

In Sandusky County, Washington Township, the Gibsonburg Oil Co. is drilling No. 3 on the Paul J. Fought, Section 11, and W. C. Richards and others are drilling No. 6 on the A. E. Waggoner, same section. In Jackson Township, W. H. Allman, trustee, is drilling a test on the V. A. Beely, Section 32, and Melvin Good, is drilling a test on the Ed Nye, same section. In Woodville Township, the Ohio Oil Co. abandoned Nos. 10 and 21 on the Caleb Clink.

In Seneca County, Liberty Township, W. J. Poyser and others are drilling No. 1 on the Homer Martin, also No. 3 on the Mile Saul, both in Section 36. Milligan & Faucett are drilling a test on the Edward Stahl, Section 33. Van Tassell and others are working at a test on the A. B. Michaels, Section 6, and Mason Brothers and others are drilling a test on the E. G. Brosius, same section. In Hopewell Township, W. C. Richards and others are drilling a test on the J. Rosenberger, Section 1.

In Shelby County, Cynthian Township, A. Ernest's test in the northwest corner of the B. Heillers, in the SE Section 15, produced an initial of 30 bbls. Sand was topped at 1,294 feet and drilled 38 feet into the sand.

E. E. Neal is drilling a second test on his own property, in Section 24, Catawba Township, Ottawa County, and on Catawba Island.

In Waterville Township, Lucas County, the Waterville Gas & Oil Co. is starting a second test for gas on the Eliza Hutchinson, Section 21. In Oregon Township, the Ohio Oil Co. pulled out and abandoned Nos. 1, 2, 3, 4 and 5 on the Frank B. Niles, Section 19, and along the south shore of Maumee Bay.

INDIANA

Operators in the southern part of Indiana across the Ohio River from Owensboro are having a hard time finding production worth while, although the Packard Oil Co. is reported to have a late completion on the Lee Carlton farm, in Spencer County, where 37 feet of sand was found. It has been estimated at close around 100 bbls., but that may be a little high. In Spencer County, Ellis & Young's No. 2 on the William Brets heirs, Section 2, Ohio Township, is reported dry at 1,347 feet. The same firm's test on the Charles Huffman, in the southwest quarter of the same section, is also a duster at 1,500 feet. Davis and others No. 1 Fred Butler, Section 1, Ohio Township, is dry at 1,150 feet.

In Perry County, Troy Field, the Packard Oil Co.'s test on the George Beaver farm is reported dry at 795 feet.

In Daviess County, Veale Township, L. G. Gee and others' No. 3 well, 1,000 feet from the south line and 300 feet from the east line of the Alonzo Veale farm, in the SE Section 21, pumped an initial of 40 bbls. at 15 feet in the sand or at a total depth of 1,335 feet.

In Adams County, Wabash Township, in the old Trenton Rock area of the State, A. C. Spindler drilled a dry hole in a test on the S. Teeter farm, Section 1, while in Jefferson Township, George S. Lacknett and others found a 15-bbl. pumper in a test on the S. S. Egley, Section 3. In Monroe Township, Randolph County, T. O. Thorp abandoned No. 1 on the Clau Calhoun, Section 9.

In Prairie Creek Township, Vigo County, the Siosi Oil Corp. is drilling No. 7 on the William Riggs No. 2 farm, Section 32, and Pearce and others are drilling No. 4 on the F. E. Shattuck, same section.

ILLINOIS

The bringing in of a test by the Porterville Oil Co., in the northwest corner of the Glade Granby farm, in the NW Section 30, Prairie Township, Crawford County, that produced an initial of 50 bbls. from a depth of 970 feet, may mean an extension to the older producing section. Frank Allison and others have started a test on the William Akerman, Section 1, same township, and its outcome will be watched with interest. H. D. Barker and others are starting a test on the A. W. Mann, Section 13, Martin Township. The Ohio Oil Co.'s No. 29 well on the J. M. Drake, Section 9, Oblong Township, produced an initial of 5 bbls. at 1,019 feet. In Honey Creek Township, the Selby-Cisler Producing Co.'s No. 18 on the Joseph J. Ford, Section 6, is reported for 2 bbls. at 997 feet.

In the Allendale Field of Wabash Township, Wabash County, Jose S. Young, Jr., and others' No. 12 well, 600 feet from the north line and 200 feet from the east line of the Joseph Keyser farm, Section 13, pumped 25 bbls. initial at from 1,451 to 1,464 feet. Mount Carmel Oil Co.'s No. 10, in the southwest corner of the F. M. Leek, in the SW Section 1, pumped 15 bbls. initial from the Cisil sand at from 1,542 to 1,556 feet. Ramsey Oil Co.'s second test, 800 feet from the south line and 200 feet from the west line of the George A. Ramsey farm, in the SW Section 4, was a dry hole at 1,586 feet. Ridge Farm Oil Co. has a duster in No. 9 on the W. M. Price, Section 14, same township, at 1,580 feet.

Another big shallow sand producer was found in the Dupo Field, in Sugar Loaf Township, St. Clair County, when the Ohio Oil Co. drilled in No. 6 on the Matilda Dyroff farm, in the SE Section 28, and in the southwest corner of the farm. The well produced an initial of 350 bbls. from a depth of 440 to 493 feet.

Central Ohio Fields

Thirty-three completions were reported from the Central Ohio Field during the past week, of which 9 were oil wells with an initial production of 196 bbls., 11 dry holes and 13 gas wells. In new work starting and under way there were 9 new locations made and 25 wells started spudding, for a total in new work for the week of 34. This work is scattered over 17 counties.

In Ashland County, Lake Township, Davis and others' No. 2 on the L. O. Chesrown, Section 3, produced an initial of 50 bbls. from the Berea sand at from 529 to 599 feet. Robinson and others' No. 1 Phil Shaffer, Section 16, showed 20 bbls. initial at from 586 to 636 feet, while the same parties' No. 1 John Peters, Section 15, pumped 2 bbls. at from 549 to 612 feet. Robinson and others are drilling a test on the Albert Strang, Section 16; also drilling No. 3 G. M. Heffelfinger, Section 9. Ohio Fuel Gas Co. is drilling No. 1 on the Ellis A. Morris, Sections 3 and 4, same township. In Vermillion Township, M. and S. Burtner is drilling a second test on the John Obrecht, Section 36. In Orange Township, the Ohio Fuel Gas Co. is drilling No. 1-4,775 on the J. E. Laughrey, Section 32. Meltzer and others are drilling No. 2 on the Michael Ott, Sr., Section 34, Mohican Township, while the Kemrow Co. is drilling a test on the C. W. Hiner, Section 1, Montgomery Township.

In Medina County, the Ohio Fuel Gas Co. has an average gas well in No. 1-4,755 on the J. E. Gault farm, Section 6, Lafayette Township. Harmon & George found a dry hole in No. 3 on the Idana V. Stair farm, Lot 142, Harrisville Township, at from 2,845 to 2,855 feet.

In Lorain County, Carlisle Township, the Ohio Fuel Gas Co. found a gas producer in No. 2-4785 on the Julia Clark, Section 18, and is drilling No. 1-4790 on the Julia Clark farm, Section 13, same township.

Wayne County

In Wayne County, Plain Township, the Garn-Woodward Oil Co.'s test on the Elmer Ely farm, Section 25, found a broken sand in the Berea at from 562 to 591 feet, and developed a duster. In Congress Township, Hulse & Kundtz failed to find any pay sand in a test on the H. P. Myers farm, Section 16. Ohio Fuel Gas Co., drilling No. 1-4813 on the Brada Geitgey, and No. 1-4814 on the Jennie Stair farm, both in Section 18, same township. Bryan and others' No. 3 on the James C. Clark, Section 18, Franklin Township, was dry in the Berea sand at 539 to 547 feet. In Chester Township, B. Slagel's second test on the M. G. Ruff farm, Section 35, shows for about a half barrel in the Berea sand at from 484 to 499 feet and may be drilled deeper.

In Holmes County, Paint Township, the Ohio Fuel Gas Co. has a fair gas well in No. 1-4715 on the Savilla Herman farm, Section 29, and drilling No. 1-3558 on the Mary Shrock farm, Section 5, same township.

In Richland County, the Ohio Fuel Gas Co.'s No. 1-3456 on the H. H. Tarris farm, Section 20, Monroe Township, failed to find any pay sand and goes as a dry hole.

In Knox County, Brown Township, the Ohio Fuel Gas Co. has a gas well in No. 1-3619 on the J. J. Hyatt farm, Section 6, and drilling No. 3-4795 on the J. T. Severns, Section 2, same township. Harry Perkins found a light gas well at a test on the J. Gaumer farm, Section 21, Howard Township.

In Coshocton County, Clark Township, the Ohio Oil Co. is drilling No. 3 on the Robert Rhode farm, Section 6. Pure Oil Co. is drilling a test on the W. L. Norris farm, Section 12, Pike Township, and the Fender Oil Co. is drilling a test on the Gotlieb Reuss farm, Section 10, Mill Creek Township. Ohio Oil Co. made a location for No. 3 on the Frank Mullett, in Clark Township.

In Summit County, Greene Township, the East Ohio Gas Co. found an unusually large gas producer in a test on the Ada Leighton farm, Section 7, and F. A. Brendall and others also found a big gas producer in a test on the O. F. Kepler farm, Section 8, at from 4,144 to 4,180 feet. The Leighton farm well of the East Ohio company found its gas volume at 3,044 to 4,079 feet. In Franklin Township, same county, the East Ohio Gas Co. is drilling No. 1 on the Adam Kepler farm, Section 13, and No. 2 on the Elton H. Daily farm, Section 26, also made a location for a second test on the John M. Weaver, Section 23. F. A. Brendall and others are starting a test on the Anna C. Behney farm, Section 13, and George Eagon is drilling a test on the E. H. Pille farm, same section.

Licking County

In Licking County, Perry Township, McClay Brothers have a light gas well in a test on the H. H. Hoover farm, Section 7, at from 747 to 754 feet. H. C. Farmer is drilling a second test on the George Rogers, same section. Emerald Petroleum Co. is starting No. 5 on the John A. Little farm, Section 8, Fallsburg Township. Ohio Fuel Gas Co.'s No. 2-2831 on the Burton Cooperider farm, Section 8, Bowling Green Township, shows for an average gas well in the Clinton sand from 2,912 to 2,918 feet. Preston Oil Co. is drilling a second test on the Corkwell-Spencer farm, Section 4, Mary Ann Township. In Franklin Township, Vaughn and Southern's No. 6 on the Dora E. Dustheimer, Section 6, is reported good for 2 bbls. from 770 to 778 feet. Ohio Fuel Gas Co.'s No. 1-4800 on the Melvina Stasel farm, Section 23, Madison Township, pumped 4 bbls. initial at from 638 to 646 feet.

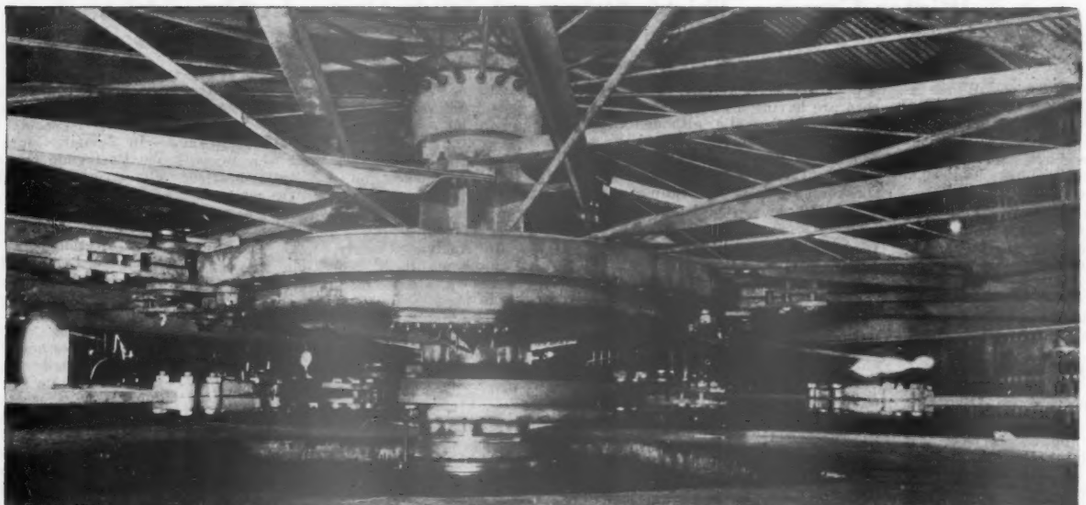
In Muskingum County, Falls Township, the Ohio Fuel Gas Co. found a dry hole in No. 1-3610 on the Amelia Smith farm, in the Third-Quarter Section. This test showed sand from 3,428 to 3,434 feet, also at from 3,450 to 3,473 feet, but only rainbow showings were noticeable. The Pure Oil Co. is reported having a good showing at from 3,078 to 3,130 feet at No. 1 on the Lloyd McKee farm, Section 6, Jackson Township. Fetty & Louchery are drilling No. 2 on the Dan T. Duff farm, Section 21, Monroe Township.

In Athens County, Ames Township, the Ohio Fuel Gas Co. has a fair gas well in No. 2-4772 on the Loring Hill farm, in fractional Section 3, in the Maxon sand at from 475 to 506 feet. Same company made a location for No. 1-4811 on the Horson Ahle farm, Section 6. In Carthage Township, same company has a gas well in the Maxon sand at 979 feet in No. 6-4747 on the Michael Kinnen farm in fractional Section 32. In Lodi Township, same company has an average gas well in No. 1-3594 on the E. L. Sargent farm, and in Lee Township has a fair gas well in No. 1-4726 on the E. G. Winget farm, Section 12, in the lower Cow Run sand at from 410 to 461 feet. The same company found a good gas producer in No. 2-4786 on the W. and C. Richardson farm, Lot 131, Rome Township, same county, in the Maxburg sand at 925 to 960 feet, total depth 1,025 feet, and made a location for No. 1-4816 on the T. N. Hoover farm, Sections 1 and 2, Waterloo Township, same county. Same company made a location for a test on the Henry A. Hatch farm, Sections 1 and 31, Rome Township.

Meigs County

In Meigs County, Sutton Township, the Preston Oil Co.'s No. 2-1337 on the George J. Reefer farm, Section 18, shows for a light gas well in the upper Berea

(Continued on Page 162)



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TIMKEN *Tapered Roller* **BEARINGS**

New Pool Northwest of Taylor-Link

Rowan & Tong's Discovery in Pecos County Flowed 240 Bbls. in 2 Hours and 40 Minutes. A Huge Surprise

By L. E. Bredberg
Staff Correspondent, West Texas Fields

FORT WORTH, Tex., Sept. 2.—Pecos County supplied another pool in the Permian Basin in the past week and a well in the new Taylor-Link area which surpassed any yet completed in that pool.

The latest discovery is the Rowan & Tong's No. 1 McDonald, located 1,170 feet from the north and 2,490 feet from the east lines of Section 46, Block 12, H.&G.N. Survey, slightly over 5 miles northwest of the new Taylor-Link Pool which was opened several weeks ago.

Elevation of this test is 2,484 feet, top of the lime was found at 1,470 feet and top of the salt at 725 feet. Top of the pay is 1,605 feet, where it is standing shut in for sufficient storage and pipe line facilities. A hole full of sulphur water was encountered at 1,405 feet, and a fishing job at around this depth caused the firm to drill by the tools. A showing of gas was struck at 1,593 feet, and 12 feet lower the pay was found.

In the first two hours and 40 minutes flow it made 340 bbls. of oil with some water, but the water is considered as coming from 1,405 feet due to the fact that no casing was set below 898 feet, where the 8-inch was set. One 500-bbl. tank had been erected to take care of the immediate production when the well was being completed, and five more are under process of construction by Rowan & Tong.

This well was a huge surprise to many who had been closely following activities in the Taylor-Link area, and there were many who no doubt thought that this test had little chance when the Tidal Oil Co.'s No. 3 University, located in the SE of Section 17, Block 20, approximately 2½ miles south and a little east of the Rowan and Tong well, was shut down at 1,716 feet waiting on plugging orders after it started flowing sulphur water at 1,580 feet. Elevation of this test is 2,471 feet, the salt was topped at 850, the water stratum being a couple of feet higher than in the discovery, and about 17 feet higher on the lime than in Rowan & Tong's well. Due to this discovery, the Tidal well is now deepening although it is flowing sulphur water. One mile to the west of Tidal's No. 3 its No. 1 was abandoned in Section 16 at the total depth of 1,602 feet after encountering sulphur water at 1,320 feet and an increase at 1,536 feet. Elevation of this test is 2,495 feet, and the salt was topped at 786 feet and the lime at 1,320 feet.

The gravity of this oil tested about the same as that in the Taylor-Link Pool, 30 degrees at 75 degrees Fahrenheit, but due to the two Tidal wells, one being abandoned at 1,602 feet and the other drilling at 1,725 feet with no oil, lying between the two areas, practically cuts down the possibility of linking of the two pools with production. The Rowan & Tong area has no wells around it to define it in any direction at the present, and several square miles are open to possibilities until they are tested to prove whether or not they are to produce or be abandoned in this virgin territory. The Jayhawk Oil Co.'s No. 1 Price, located 3½ miles northwest in Section 6, Block 12, H.&G.N. Survey, is the only test drilling near this new area, except the wells in the Taylor-Link Pool to the south, and no doubt other tests will soon be made in all other directions around the new discovery to test the acreage held by various companies and operators.

Acreage to the south of the discovery is broken up into small tracts, as is Section 33, Block 11, to the west, but to the north the acreage is held in whole sections by different companies, which will probably help to cut down drilling operations at the present. There, however, will be quite a spurt of drilling activity in the immediate vicinity of the well, and possibly on the small plots of acreage near-by, but unless the Humble Pipe Line Co. lays the 6-inch line via this new area to the Taylor-Link Pool, as reported, or unless the Texas or Shell Pipe Line companies come in to these new areas, it will do no good for the operators to produce their wells.

Due to the fact that the Shell Petroleum Corp. completed its No. 1-C in Section 31, Block 16, in the Taylor-Link Pool, for such a good well this week, and that the company owns considerable acreage in the pool, which will undoubtedly be productive, its sister company, the Shell Pipe Line Co., which has a large tank farm at McCamey, and trunk lines to Healdton, Okla., and to Houston, Tex., out of that place, may be prevailed upon to run a line to this Pool, via the Rowan & Tong Pool, taking production from both pools.

The Texas Pipe Line Co., which has a 10-12-inch running through McCamey to Houston, Tex., may also build a line into the Rowan & Tong Pool since The Texas Company has acquired two likely-looking sections near the well, and already had a quarter of the section in which the new discovery is located. Probably production from this acreage may help to keep the Texas line running to capacity for some time, as is also the case in the Shell and the Humble Pipe Line Co.'s situation. The accompanying plat will show the acreage held by the Humble Oil & Refining Co. in the Rowan & Tong area, Sections 25, 27, 40, 6 and 27 looking very promising as containing producing acreage. This may have some bearing on the Humble Pipe Line Co. continuing with its plan to lay a 6-inch line to the Taylor-Link Pool, but running it slightly out of the way to gather oil from the Rowan & Tong producers. The Rowan & Tong well lies about 2½ miles to the west of a direct line from McCamey to the Taylor-Link Pool.

The Gulf Production Co. also has some good looking acreage in the new area, and if it proves to be productive the Gulf Pipe Line Co. may lay a line from its pumping station in the Yates Pool, or its tank farm at Hurdle to gather the Gulf's oil.

Of course all this is purely hypothetical at present, but at least half of it may prove correct, for these large pipe line companies will need a vast amount of crude to keep their lines running to capacity, if desired, and these two new areas will lend much to the possibility of keeping these lines filled, consequently some, if not all, of these companies will no doubt lay lines and contract for production from various operators, and take the production from their sister company's leases.

Independent Makes Purchase

The largest deal yet consummated in this new area was between the Independent Oil & Gas Co. and Rowan & Tong for a reported price of $250,000 in cash and $750,000 in oil, or about $1,250 per acre, covering the well, 500 acres in leases and 320 acres of royalty which Rowan & Tong owned in the area. The Independent Oil & Gas Co. is to do the operating.

The accompanying map will show holdings of other operators and companies around the discovery. The Humble, Simms, Texas and Gulf Production companies have the closest-in and largest holdings. The Tidal Oil Co. owns an offset 80 acres, as does the Milham Oil Corp., and the Landreth Production Co.

Near-by Operations

The Gulf Production Co. has made a location in the northeast corner of Section 16, northwest of Tidal Oil Co.'s No. 3 which is standing at 1,725 feet. Possibly the latter well will be drilled deeper seeking the Rowan & Tong pay. The Gulf test will be especially interesting since it is approximately three-quarters of a mile north of the Tidal's No. 1 and 3 and will test more acreage in the direction of the Rowan & Tong discovery.

A Geological Opinion

According to some geologists, the Rowan & Tong and Taylor-Link Pools are located in a saddle between the Yates Pool and the Fort Stockton "high," and that the production is coming from porous lentils which will make the areas rather treacherous, and it is thought there is the possibility of many dry holes being drilled among the producers. However, this remains to be seen, and since the completion of Shell Petroleum Corp.'s No. 1-C University, this week for an estimated amount of between 6,000 and 8,000 bbls. daily at a total depth of 961 feet it looks as if the Taylor-Link Pool is due for several large producers from the shallow pay as well as the 1,600-foot pay. Pay in the Shell well was found from 930-40 feet. It is now shut in for storage.

One Disappointing Showing

One rather disappointing well in this pool is Moncrief and others' No. 1 University, in the NE cor. NW, Section 13, Block 18. Total depth of this test is 1,715 feet, and only produced 16 bbls. in 24 hours while drilling before being shut down. It was shot with 80 quarts from 1,643-84 feet which helped it materially, and after this shot it flowed 32 bbls. the first 15 hours, not showing up nearly as well as the other three producers to the east.

The Landreth Producing Co. has made a south offset location to its gasser which is located in the SE, Section 13, and this will be closely watched due to the fact that it is the farthest location made to the south. It is also reported that the World Oil Co. has made several locations on its scattered acreage in the Taylor-Link Pool. The Taylor-Link Oil Co. has announced three more locations on its acreage in Sections 13 and 31. All of these locations, if drilled immediately will give a thorough test in the immediate vicinity of the discovery well of the Taylor-Link Oil Co.

The Tidal Oil Co. has announced the location for its No. 1 McDonald, 330 feet from the north and east of the S half NW, Section 46, a southwest offset to the Rowan & Tong discovery. This is the first offset location announced for this new area, and several more will be reported at once. The Milham Oil Corp. will no doubt report a west offset location in a few days, and chances are that the Humble Oil & Refining Co. will stake one across the line in Section 45 to the north of the new pool opener. Mr. McDonald retains Section 3, to the east, and unless some company or operator purchases the lease on that section there probably will be no rig moving in on that land for some time. It is understood that $5,000 per acre is being asked for that piece of acreage.

The last report on Rowan & Tong's well gave it flowing 90 bbls. per hour, with the owners trying to run 6⅝-inch casing to shut off water which has been coming in from above the pay.

Northern Pecos County

In the northern part of Pecos County the Pecos County Crude Oil Purchasing Co.'s No. 3 Pecos Valley Oil Co., in the SW of Section 22, Block 10, H.&G.N., is now drilling below 1,660 feet in sand with a showing of gas from 1,597 feet, and an increase at 1,626 feet, and 75 feet of oil standing in the hole, from pay encountered at 1,610 feet. There is approximately 200,000 feet of gas coming from the gas sands. This test is not very reassuring for this area, and there is considerable doubt as to whether or not it will make a commercial producer. Another test just north of the discovery well; the C. E. Evans' No. 1 Pecos Valley Oil Co., located in the S half of Sec-

(Continued on Page 148)

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended September 2

Company, farm and location—	Remarks—
ANDREWS COUNTY	
Deep Rock's No. 1 Ogden, 2,310 ft. E, 330 ft. S, Sec. 6, Blk. A-46, Public School Land	Rigging up standard tools.
BORDEN COUNTY	
Louisiana Oil & Ref. Co.'s No. 1 Miller, 1,320 ft. from W and 150 ft. from S line, Sec. 255, Blk. 97, H.&T.C.	Building rig.
Moncrief et al's No. 1 Munger, C of SW, Sec. 14, Blk. 31.	Shut down 570 ft.
Teas & Wheeler's No. 1 Long, 1,320 ft. N and E of Sec. 27, Blk. 30, T.&P. Sur.	Top salt 1,030 ft.; drlg. 2,205 ft.
BREWSTER COUNTY	
E. W. Bateman et al's No. 2 Nevill, 2,000 ft. S and W line of Sec. 62, Blk. 13, G.H.&S.A.R.R. Sur.	Drlg. 1,700 ft.
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F.	Fishing 1,935 ft.
Cowden & Bowser's No. 1-A Jackson & Harmon, Sec. 1, Blk. 331, T.C.R.R. Sur.	Set 8-in. 1,550 ft.; shut down 2,000 ft.
Forrest Oil Co.'s No. 1 Skinner, C SW SE, Sec. 100, Blk. 2, G.C.&S.F. Sur.	Straightening crooked hole 430 ft.
J. M. Hickey's No. 1 Jackson & Harmon, NE cor., Sec. 182, Blk. 9, G.H.&S.A. Sur.	Shut down 2,000 ft.
Johnson & Weekley's No. 1 Jackson & Harmon, C Sec. 104, Blk. 10, G.H.&S.A. Sur.	Shut down 2,750 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,740 ft.
COKE COUNTY	
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur., elev. 2,750 ft.	Drlg. 2,892 ft.
Mid-Kansas Oil Co.'s No. 1 W. E. Lackey, 330 ft. N and E of SW cor., Sec. 272, Blk. 1-A, H.&T.C.	Pay 3,755-56 ft.; 6⅝-in. casing set 3,451 ft.; drlg. 3,995 ft.
Ray E. McCamey et al's No. 1 McCutcheon, 2,300 ft. S and 785 ft. W of NE cor. of T. J. Hines Sur. No. 4.	Shut down 3,520 ft.
CONCHO COUNTY	
Duffy et al's No. 1 Gilliam, 1,520 ft. N and 1,120 ft. W of SE cor., Sec. 21, Blk. 10, H.&T.C.R.R.	Spudded and shut down.
Jones & Leiner's No. 1 Jones, 420 ft. S and 15 ft. E of NW cor., John G. Reh Sur. No. 1,878	Top lime 1,770 ft.; top pay 1,775-80 ft.; 18 ft. oil in hole; to test; shut down 2,375 ft.
Turner et al's No. 1 Borsig, 150 ft. from S of SE cor. G. Emig Sur. 130, 6 mi. W of Paint Rock	Shut down 735 ft.

(Continued on Page 110)

Curtail Output of Gray County Wells

New Wells Are Shut Down in Top of Sand or Shut In Because of Lack of Pipe Lines. Increase in North Texas

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Sept. 2.—Although approximately 35 wells were shut down in the pay, or were shut in for lack of pipe line facilities, in Gray County, that Panhandle county showed a gain of 1,100 bbls. over the past week, helping to make an increase of 2,030 bbls. in the Panhandle district, and causing the pipe line situation to become more acute. Proration of production in Gray County was brought up in the meeting last week, of 20 representatives of different operators and companies operating in the county, but it was thought that this would not be carried out except as a last resort. As this week showed a gain over last week, future daily averages will no doubt have a bearing on whether or not Gray County does bring itself up to such production proportions that proration will be necessary to remedy the acute situation, and congestion of pipe lines serving the area.

As weeks past have generally shown a production increase over their predecessors by several thousand barrels, the 1,100-bbl. gain of this week might be proof of the success of the plan of shutting down of wells in top of the pay, for if this plan had not been tried there is a great probability that the increase would have been far above 1,100 bbls. Another week may prove the plan a complete success.

The Wichtex Oil Co. has been mudding back its No. 1 Johnson in the Tarver Pool, Foard County, to test a hard sand which was encountered from 1,368-78 feet, and which had a showing of oil. An attempt was made to put in a plug and the well blew in from gas sand at 1,942-47 feet, and started flowing salt water with a small amount of oil. Another attempt is being made to set a plug in order to test the sand. This test was a big disappointment to operators in the area, and looked as if it would add a dry hole to those already drilled. There are only two producers in the pool, the Shell Petroleum Corp.'s No. 1 Tarver, which was the discovery well, and a second well drilled by this company, No. 1 Johnson. These two wells are producing 255 bbls. daily.

Production Up in North Texas

The Wichita Falls district witnessed an increase in daily average, to the total amount of 1,003 bbls. this week. Cooke, Jack and Wilbarger Counties representing the greatest gains among the individual counties having production.

Comanche County fell off over 900 bbls. this week, helping to bring the Ranger district daily average down 664 bbls. Coleman County was raised slightly by a couple of completions in the Morris Pool. One of the most interesting in this pool was a quarter of a mile extension well to the south. This well is owned by Levi Smith, and is located on the Morris farm in the J. H. Woods Survey No. 483. It encountered 20,000,000 feet of gas from sand at 1,968-2,010 feet, and from the second sand at 2,012-17 feet. It is spraying about 40 bbls. of oil daily with this gas. It is rather a small well for this pool, but is a feature due to the fact that it was an extension well and proves up more inside acreage in the pool, which is one of the best, if not the best pool in Coleman County at the present time. Coleman County's daily average is maintained at fixed level by this pool, and is also aided materially in raising above this level off and on.

In Callahan County, the E. P. Campbell No. 1 Hennessey had a good showing of oil from 1,530-50 feet, and bid fair of making a small producer although it started making considerable water. Casing is now being run in order to shut off the water and allow deepening. This test is located in Section 72, B.B.B.&C. Survey, and has a chance of opening more territory for testing out a new pool.

WICHITA FALLS COMPLETIONS
Week Ending August 31
Wichita County

R. P. Dorian's No. 2 Morgan had an initial production of 4 bbls. at 1,620-28 feet. Comac and Prairie Oil & Gas Co.'s No. 9 Bishop, initial production of 30 bbls. oil and 10 bbls. of water at 1,783½-92 feet. Golding Cochran and others' No. 10 Waggoner, dry and abandoned at 604 feet; Kimbell & Bostic's No. 8 Crow was junked at 830 feet. Hunter and others' No. 11 McClure-B had an initial production of 50 bbls. at 1,312-18 feet. The Texas Company's No. 9 Waggoner, dry and abandoned at 1,938 feet. Its No. 10 Waggoner, dry and abandoned at 1,297 feet. Tucker and others' No. 29 Hirchi topped the pay at 1,882 feet, was drilled to a total depth of 1,882-93 feet, and had an initial production of 20 bbls.

PANHANDLE COMPLETIONS
Week Ending August 31
Carson County

Shell Petroleum Corp. and Raber's No. 1 Percival location was abandoned. Empire Gas & Fuel Co.'s No. 18, Burnett, Section 89, Block 5, I.&G.N.R.R. Survey, drilled to a total depth of 2,480 feet and made 51,000,000 feet of gas from 2,-325-2,480 feet. Midwest Exploration Co.'s No. 3 Cooper, 990 feet south and 330 feet east of NW cor. W half NW, Section 5, Block 9, I.&G.N.R.R. Survey, was shot with 240 quarts at 3,040-3,102 feet, initial production 380 bbls. Timmis' No. 3 Garner, Section 113, Block 4, I.&G.N. R.R. Survey, initial production of 50 bbls. at 3,099-3,132 feet.

Gray County

Lyons and others' No. 1 Morse, Section 2, Block 26, H.&G.N.R.R. Survey, drilled to a total depth of 2,638 feet, shot with 200 quarts at 2,540-2,614 feet and had an initial production of 168 bbls. at 2,574-99 feet and 2,635-38 feet. McMan Oil & Gas Co.'s No. 3 Palmer, initial production of 1,080 bbls. at 2,870-95 feet and was drilled to a total depth of 2,935 feet. Bob Dunlop's No. 2 Morse, Section 2, Block 26, initial production of 200 bbls. after being shot with 180 quarts at 2,529-75 feet. The Texas Company's No. 12 Saunders, 8,000,000 feet of gas at 2,315-2,543 feet. Phillips Petroleum Co.'s No. 5 Palmer made 7,000,000 feet of gas at 2,751-2,859 feet.

Wheeler County

Johnson & Wischkamper's No. 1 West was dry and abandoned at 1,871 feet.

Hutchinson County

Holmes' No. 1 Quinn, Section 7, Block 9, I.&G.N.R.R. Survey, topped the pay at 3,025-75 feet, was drilled to a total depth of 3,092 feet and had an initial production of 180 bbls. Phillips Petroleum Co.'s No. 4 Johnson Brothers topped the pay at 2,848-58 feet, drilled to a total depth of 2,866 feet, initial production of 100 bbls. Its No. 2 Johnson, initial production 100 bbls. at 2,939-44 feet. Skelly Oil Co.'s No. 7 Whittenburg topped the pay at 2,918 feet, drilled to a total depth of 2,959 feet, initial production of 175 bbls. The Texas Company's No. 2 Quinn, initial production of 123 bbls. at 3,060-80 feet, and was drilled to a total depth of 3,090 feet.

ESTIMATED DAILY AVERAGE PRODUCTION NORTH TEXAS
Week end'ng August 31

Panhandle District—	Prod.
Carson County	9,598
Hutchinson County	25,641
Gray County	98,622
Moore County	1,021
Potter County	....
Wheeler County	772
Total this week	135,654
Total last week	133,624
Increase	2,030
Wichita Falls District—	
Archer County	19,634
Baylor County	75
Clay County	732
Cooke County	12,156
Foard County	255
Jack County	3,956
Haskell County	100
Montague County	6,437
Throckmorton County	674
Wilbarger County	33,157
Young County	8,230
Wichita County	26,471
Total this week	111,875
Total last week	110,553
Increase	1,322
Ranger District—	
Brown County	8,545
Callahan County	4,100
Coleman County	7,590
Comanche County	1,080
Palo Pinto County	435
Eastland County	6,131
Shackelford County	11,020
Stephens County	6,735
Total this week	45,636
Total last week	46,300
Decrease	664
Grand total this week	293,165
Grand total last week	290,477
Increase	2,688

RANGER DISTRICT
Week Ended August 31
Brown County

Humble Oil & Refining Co.'s No. 3-B Hickman had an initial production of 20 bbls. after having been shot with 20 quarts at 1,281-87 feet and was drilled to a total depth of 1,300 feet. Their No. 1 Kilgore was shot with 20 quarts at 1,209-15 feet and had an initial production of 20 bbls. Their No. 2 Munselle had an initial production of 20 bbls. after having been shot with 3 quarts at 1,132-36 feet. Lloyd Oil Co.'s No. 4 Duff had an initial production of 20 bbls. at 1,127-47 feet.

Callahan County

Ewmo Oil Co.'s No. 1 Smith was dry and abandoned at 1,792 feet; Hartly Burton's No. 1 Davis Hines, dry and abandoned at 1,302 feet.

Comanche County

L. B. Fain's No. 1 Poteet was plugged and abandoned at 3,415 feet.

Concho County

Duffey and others' No. 1 Gilliam was temporarily abandoned at 80 feet.

Coleman County

Herbert Oil Co.'s No. 1 Bennett was shot with 20 quarts at 1,794-1,802 feet, initial production of 20 bbls.; White initial production of 752 bbls. oil and Eagle Oil & Refining Co.'s No. 2 Morris, 1,800,000 feet of gas at 2,018-22 feet; Greene and others' No. 1 Johnson, dry and abandoned at 1,070 feet.

Eastland County

States Oil Corp.'s No. 7 Hise had an initial production of 7 bbls. oil and 7 bbls. water at 1,902-07 feet; Atwood and others' No. 2 Ainsworth, dry and abandoned at 1,240 feet; Hoffman & Page's No. 5 Harbin, plugged and abandoned at 1,292 feet; Root & Fehl's No. 1 Balderree, initial production of 50 bbls. oil and 50,000 feet of gas after having been shot

(Continued on Page 147)

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending September 2
CARSON COUNTY

Company, well, farm, name, section and block—	Remarks—
Champlin Ref. Co.'s No. 4 McConnell, 990 ft. S, 330 ft. E, NW W½ NW, Sec. 67, Blk. 4, I.&G.N.R.R. Sur.	Drlg. 2,090 ft.
Danciger O. & R. Co.'s No. 1 Block, 330 ft. from N and E lines, Sec. 112, Blk. 4, I.&G.N. Sur.	Location.
Delmar Oil Co.'s No. 5 Noel, 330 ft. S and W, NE cor. W½ SE, Sec. 198, Blk. 3, I.&G.N. Sur.	Drlg. 2,420 ft.
Empire G. & F. Co.'s No. 19 Burnett, C SE, Sec. 89, Blk. 5, I.&G.N.R.R. Sur.	Drlg. 650 ft.
Empire G. & F. Co.'s No. 1 M. P. Co., "C," 330 ft. N and W, SE cor. NW, Sec. 108, Blk. 4, I.&G.N.R.R. Sur.	Drlg. 2,200 ft.
Empire G. & F. Co.'s No. 2 Deahl, 660 ft. N and E, SW, Sec. 3, Blk. 5, B.&B. Sur.	Location.
Empire G. & F. Co.'s No. 1 Fuqua, 330 ft. N and W, SE cor. NW, Sec. 17, Blk. 3, A.B.&M. Sur.	Drlg. 290 ft.
Empire G. & F. Co.'s No. 2 M. P. Co. (Lane), C NE, Sec. 62 Blk. 4, I.&G.N.R.R. Sur.	Drlg. 470 ft.
Empire G. & F. Co.'s No. 1 Deahl, 660 ft. from S and W lines, Sec. 3, Blk. 5, B.&B. Sur.	Drlg. 1,740 ft.
Gulf Prod. Co.'s No. 1 Garner-B, 330 ft. N and W, SE cor. SW, Sec. 106, Blk. 4, I.&G.N.R.R. Sur.	Estimated 7,000,000 ft. gas; S.D. 3,191 ft; 3 bbls. oil per hr; 15,-000,000 ft. gas.
Gulf Prod. Co.'s No. 3 Cooper, 330 ft. S, 990 ft. W, NE cor. SW, Sec. 5, Blk. 9, I.&G.N.R.R. Sur.	Drlg. 2,197 ft.
Gulf Prod. Co.'s No. 4 Cooper, 330 ft. S and E, NW SW, Sec. 5, Blk. 9, I.&G.N.R.R. Sur.	Drlg. 850 ft.
Gulf Prod. Co.'s No. 7 Noel, 330 ft. S and W, NE cor. SW, Sec. 198, Blk. 3, I.&G.N. Sur.	S.O. 3,180-84 ft.; S.D. 3,235 ft; swbng. 12½ bbls. per hr; to test.
Herragan Oil Co.'s No. 1 L. C. McConnell, 330 ft. N and W lines W½ SW, Sec. 187, Blk. 3, I.&G.N. Sur.	S.G. 2,780 ft; increase from 2,860-2,908 ft; fishing 2,925 ft.
Magnolia Pet. Co.'s No. 7 fee, 990 ft. from W line, 890 ft. from S line SE, Sec. 91, Blk. 4, I.&G.N. Sur.	S.G. 2,655 ft; drlg. 2,920 ft.
Midwest Explin. Co.'s No. 4 Cooper, 330 ft. N and E, SW cor. W½ NW, Sec. 5, Blk. 9, I.&G.N. Sur.	Drlg. 480 ft.
Osborne et als' No. 2 Percival, 330 ft. N and W, SE cor. E½ NE, Sec. 199, Blk. 3, I.&G.N. Sur.	Drlg. 2,705 ft.
Prairie O. & G. Co.'s No. 2 Nail, 330 ft. from N and W lines N½ E½ SE, Sec. 198, Blk. 3, I.&G.N. Sur.	Drlg. 1,640 ft.
Reynolds et als' No. 2 Cooper, 330 ft. from S and W lines, E½ NW, Sec. 5, Blk. 9, I.&G.N. Sur.	Spudding.
Ryan Cons. Oil Co.'s No. 5 Block, 330 ft. N and W, SE cor. NE, Sec. 111, Blk. 4, I.&G.N. Sur.	Drlg. 250 ft.
Ryan Cons. Oil Co.'s No. 6 Block, 330 ft. S, 990 ft. E, NW NE, Sec. 111, Blk. 4, I.&G.N. Sur.	Rig.
Skelly Oil Co.'s No. 18 Schafer, 990 ft. S, 355 ft. W, NE, Sec. 68, Blk. 4, I.&G.N. Sur.	U.R. 8-in. csg. 2,197 ft.
Skelly Oil Co.'s No. 19 Schafer, 330 ft. N, 990 ft. E, SW cor. NE, Sec. 198, Blk. 3, I.&G.N. Sur.	Drlg. 1,975 ft.
Skelly Oil Co.'s No. 20 Schafer, 330 ft. N, 990 ft. W, SE cor. N½, Sec. 198, Blk. 3, I.&G.N. Sur.	Set 8-in. csg. 1,183 ft.
Skelly Oil Co.'s No. 21 Schafer, 340 ft. N, 1,540 ft. W, SE cor. SE, Sec. 68, Blk. 4, I.&G.N.R.R. Sur.	Location.
Stubblefield et als' No. 1 Garner, 330 ft. from S and E lines, SE, Sec. 104, Blk. 4	Drlg. 2,320 ft.

(Continued on Page 109)

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Pipe Line Construction News

DENVER-FORT COLLINS LINE MAKING HEADWAY

The Public Service Co. is spending more than $1,500,000 on the main from Denver to Fort Collins, which will serve northern Colorado communities. This line is expected to be completed in October and ready to furnish service to customers by winter. In addition to Fort Collins the gas line will serve Longmont, Loveland, Boulder, Greeley and Golden. From the Denver main, extensions have been built to Englewood and Littleton.

In southern Colorado, Rocky Ford, La Junta and the beet factory at Swink have been connected to the main line at an expenditure of more than $250,000. Las Animas is negotiating for gas.

The company is also building a $500,000 booster station at Model, near Pueblo, which will furnish a higher pressure for the additional customers who will draw gas from the line when northern Colorado services are connected. This station will be ready for the winter load.

UTILITY LARGE USER OF GAS

St. Joseph Railway, Light, Heat & Power Co., serving electricity to the city and operating the street railway system of St. Joseph, Mo., will receive natural gas from a 10-inch main now being laid by the St. Joseph Gas Co. The new line will connect with the gas company's system at the plant and will run north to the light plant located near the Missouri River. The power and light company expects to use between 70,000,000 and 80,000,000 feet per month.

PLANS TWO REPLACEMENTS

Cities Service Gas Co. has completed plans for the replacement of the 16-inch pipe line from Ottawa to Lawrence, Kans., a distance of 18 miles, with an 18-inch line. The new line will take a slightly different route from the old one, but will serve the same territory. The company also plans to replace 15 miles of 12-inch line extending toward Topeka, with a 16-inch line.

LINE TO SALINAS GAS PLANT

Pacific Gas & Electric Co. has been granted permission by the California Railroad Commission to construct a natural gas transmission line from a point on its main line near Hollister, Calif., to the company's manufacturing plant in the city of Salinas, and from there to its gas manufacturing plant in the city of Monterey. The project will cost approximately $500,000.

PURE OIL CO. PLANS LINE

Pure Oil Co. is making arrangements for laying a pipe line from its Midland Field to deep water in the Saginaw district, which will enable it to ship by vessel to any point on the Great Lakes. The company now is shipping oil by tank cars from short pipe lines to Mount Pleasant, Mich., on the Pere Marquette.

The company's drilling has been confined to the Midland Field, about 40 miles from Saginaw, where it has a block of approximately 100,000 acres.

LINE COMPLETED TO CONRAD

CONRAD, Mont., Sept. 2.—The pipe line that is to carry gas from the Sunburst Field to Conrad and then on to Choteau, has been completed to the first named point. Gas is expected to be turned into the new line as soon as the hookup in the Sunburst Field is ready. The line will furnish gas for Conrad and Choteau.

GAIN IN PIPE MILL OPERATION IS ATTRIBUTED TO GAS LINE DEMANDS

By B. E. V. Luty

PITTSBURGH, Pa., Sept. 2.—The pipe mills order books are decidedly better off than they were and operation is somewhat better. Two months ago one prediction was made that the pipe mills would have a heavier production in the second half of the year than they had in the first half and now others are making the same prediction.

The chief change has been in the matter of lapweld pipe, largely for feeder and branch lines to large natural gas lines. There is no increase in demand for well material nor is any expected. Demand for standard or merchant pipe, almost entirely buttweld, runs along steadily at approximately last year's rate, there being perhaps a trifling decrease.

Some of the pipe mills are now sold up on lapweld for seven to eight weeks. Two months ago they had a light operation in lapweld and were filling orders as fast as they were received. The pipe mills are not uniformly sold up to the same extent, but those sold farthest ahead are losing some offered business through not being able to supply desired deliveries and these orders go to other mills, helping fill them up equally.

Gas Line Rumors

Little is heard now of large natural gas lines as likely to be built in the near future, except that rumors persist of a second line from Texas to Chicago. In the best informed quarters it is said to be extremely improbable that there will be two gas lines to Chicago except by one following the other after an interval of several years.

As to the steel industry in general, production has had only an insignificant tapering off since May, the record high month, not more than 10 per cent or so at the outside, up to date. There are predictions that production in the Chicago district will be distinctly lighter in September. Steel production in Alabama has been off, largely on account of the rail mill having completed its orders, but new business in rails in the South is expected in a few weeks, as a regular seasonal thing.

New buying of steel products was off in both July and August, and as a result the mills have a smaller volume of shipping orders on their books than two months ago. This is not interpreted as representing a general and permanent downturn, but seems rather to be a reflection of the vacation season and the easier position of deliveries, whereby consumers do not need to make engagements so far ahead. With some exceptions there has been in general a reversion to the practice of hand-to-mouth buying, but that should not hurt the steel industry since there had been hand-to-mouth buying, with increasing rigidity, for about six years until early this year.

Consumption Better Index

The rate of steel consumption is a much better index to the future than the rate of buying, when allowance is made for the facts mentioned. The decreases in consumption are small, and in a few lines only. There may be some increases in progress. There was the usual seasonal decrease in automobile production, and the annual rail orders are now practically completed, a few weeks later than usual.

Freight car shops, running well in the last few months, will begin running out of orders in a few weeks unless there is fresh buying of importance, which is not expected. In other directions steel consumption is maintained, if not increased. A particularly good showing is made by the structural fabricating shops, which in each of the six months, February to July inclusive, booked more business than they filled, thus accumulating a larger order book, while July bookings had been exceeded in only two months in the past.

Production of automobiles and trucks, United States and Canada, is officially reported at 517,792, making 3,929,545 for the seven months, one-third more than would be expected from the previous rate of increase. Monthly production has followed closely the seasonal variation shown by the average of the last five years. From April, the peak month, to July the decrease was 22 per cent.

CALIFORNIA LINE PLANNED

The Coast Counties Gas & Electric Co. has applied to the California Railroad Commission for a certificate to construct a natural gas pipe line from the Dudley Ridge oil field north to Crockett on the San Francisco Bay. The proposed main line would be 205 miles long, with branch lines to Watsonville and Santa Cruz areas of about 54 miles.

STARTS ON 34-MILE LINK

Sinclair Pipe Line Co. has started 34 miles of 8-inch pipe line to connect its Payson Station, a junction point outside of Seminole area, with the new Oklahoma City Pool. The line will have a capacity for 25,000 bbls. daily, and should be completed about November 1. Sinclair Consolidated's well, No. 1 Stamper, in this field, has been drilled deeper to a total depth of 6,646 feet, where it is 359 feet in the lime.

REGAL PIPE LINE

CHATHAM, Ontario, Sept. 2.—Right of way for the new oil line of the Alberta Pipe Line Co. from the north Turner Valley Field to the Regal refinery at Calgary is being cleared and ditching along the route will be commenced early this month. Some 28½ miles of 4-inch line will be laid, and the line is expected to be ready to operate in October.

MAGNOLIA COMPLETES LINE TO SAN ANTONIO

SAN ANTONIO, Tex., Sept. 2.—Magnolia Gas Co. completed its 234 miles of gas line from the Mirando district to San Antonio last week and gas was turned in on Thursday, August 28. Gas from the line will be used in supplying industries in and around San Antonio and a large volume will be used by the San Antonio Public Service Co. The capacity of the line is 125,000,000 feet, but it was carrying around 10,000,000 to 12,000,000 feet the first few days after being put in operation.

Agua Dulce Oil & Gas Co. had started stringing pipe last week for a 15-mile 12-inch line from the Agua Dulce Field in western Nueces County due north to Orange in Jim Wells County where it will tie into the Magnolia line. According to the arrangement Magnolia will deliver the gas at San Antonio to the Southern Gas Co. which with the Agua Dulce Oil & Gas Co. is a subsidiary of the Moody-Seagraves interests.

DUPLICATE LINE TO EDMONTON

Contracts for the laying of the first section of a duplicate pipe line between the Viking gas field and Edmonton, Canada, have been let by the Northwestern Utilities, Ltd., to the firm of W. A. Forman, Ltd. It is estimated that the work will cost approximately $317,000.

TABER GAS SYSTEM

CHATHAM, Ontario, Sept. 2.—Fol-Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary is constructing a distributing system at Taber, Alberta, and will deliver gas from its Bow Island line which passes close to Taber. About a half mile of pipe is being laid this fall to serve the business section, but the system will ultimately be extended to the entire town. Gas will be delivered this fall.

PIPE LINE TAXATION

CHATHAM, Ontario, Sept. 2.—The lowing a recent judicial decision, it is understood that Alberta local municipalities will impose municipal taxation on pipe lines and oil and gas wells.

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Precautions in Handling Sucker Rods

Maximum Life Attained by Proper Care in Manufacture, Inspection, Shipping, Unloading and Jointing Operations

By E. Stanley Durward
Divisional Chief Mechanical Engineer, Shell Petroleum Corp.*

ABSTRACT

The author states briefly the precautions taken by the manufacturer in making, inspecting and shipping rods, then discusses handling, shipping, unloading and jointing operations in the field, giving precautions against abuse; particular emphasis is placed upon surface cracks, their cause and the breaks resulting therefrom.

In order to get the maximum length of life and service from a string of sucker rods a number of precautions must be taken both by the manufacturer and the purchaser.

The first precautions must be taken by the steel maker. He must make his rod stock steel strictly to the specifications demanded, it must be as perfectly uniform as possible and the finished rod stock must be straight, free from mechanical damage and flaws, of uniform size within close limits and manufactured in such a way that the finished product has all of its best qualities developed to the fullest possible extent. Having done this the rod stock must be handled and shipped to the rod maker in such a way that it will not receive mechanical or any other kind of damage en route.

The rod stock manufacturer having done his part the rod manufacturer now comes into the picture. On receipt of the rod stock it must be unloaded at the factory and handled through all the processes therein so as to prevent damage to any part of the rod. Each bar of stock must be, and is in most cases, carefully examined before any work is done on it. Bars that are bent, scarred, dented or show surface flaws of any kind must be rejected to have the good parts cut out for making pony rods.

After this culling the bars go through all the processes to make the finished rods. The manufacturer must examine each rod after each process in order to cut out any rods that may be damaged or be badly made at any point in the process. When finally completed each rod must be examined to see that the joints have perfect threads and shoulders and that the body is in all ways perfect. He must take necessary precautions in shipping to the supply stores to see that rods will arrive at the store in the condition as shipped from the factory.

Unloading and Storing

The supply store must then unload and store the rods so that no damage will be done. If these precautions are taken then rods will be ready for delivery to the field man as they can be made at the present time.

Now comes the point where the field departments come in. Care must be taken that the rods are properly loaded in the supply or company store yards so that they will arrive at the lease undamaged. This means that they must be loaded and properly supported on a truck and trailer so that they cannot be bent or damaged in any way. Only recently a truckload of rods was observed going out to a lease of one of the major companies from a town supply store when the rods were being damaged every foot of their journey. They were loaded on a short-bodied truck, no trailer attached, and projected sufficiently far beyond the tail end of the truck to be bent in an arc. As the truck bumped and joggled over the rough oil field road the rods swayed up and down and every few yards hit the ground and had the joint ends trailing along the ground.

Many times the bundles of rods are thrown off the trucks, one end striking the ground first and bending the rods. In fact, the author has noted about every conceivable manner of loading and unloading rods as that operation should not be done. The bundles of rods should be lifted and placed carefully onto the truck, they should be laid thereon straight and should be carefully supported. Nothing should be loaded on top of them, especially not sharp-edged, heavy metal objects as has often been done.

Surface Damage Shortens Life

Any mechanical damage to the surface of a rod may reduce its useful life by anything up to 75 per cent or even more. If there be but one scratch or cut it may be only a short time before the rod will break at the cut. The surface skin is the toughest part of the rod. If the surface is not broken a rod which is large enough for pumping load will not break. This point is illustrated clearly in the operation of fitting a gauge glass. When it is necessary to break a gauge glass it is scratched around with a diamond or file. It will then break quite easily around the scratch. The gauge glass can also be broken without scratching but it takes a great deal more force to do so; in other words it is entirely overloaded. The same thing applies to a sucker rod. It will break with an overload as the gauge glass will do but if cut or scratched it will not stand even a normal load.

Unloading must be done with care. Rods must be laid down and not thrown down from the truck.

When new rods have been delivered to the well they are tied together in bundles of about 100 feet, and usually the tie is of wire. This tie wire must be untwisted. A common practice is to break it off with an old derrick hatchet and in so doing the rods almost always receive cuts with the disastrous after results above described. Another practice that damages the rods is to hammer out against one or more of the bundled rods one of the turns of the tie wires.

Pulling Into the Derrick

The next procedure is to pull the rods up into the derrick. In doing this in very many cases they are pulled up under a girt and are bent and kinked. They should always be pulled up slowly with a man feeding the rod into the derrick so that it is never bent, except in a long-radius arc, to prevent short bends or kinks. If this is not done the rod will be damaged. If a short bend or kink be examined under a magnifying glass it will be

(Continued on Page 148)

*Presented before Galveston meeting, September 5 and 6, 1929, of the Texas-Louisiana-Arkansas district of the American Petroleum Institute, division of Development and Production Engineering. Originally delivered before the Midland chapter July 27, 1929.

Getting the Most From Sucker Rods

Answers to Questionnaire Sent Operators in Texas, Louisiana and Arkansas Show Great Interest in Subject

By R. H. Reese
Planning Engineer, Atlantic Oil Producing Co.*

ABSTRACT

This paper summarizes replies from operators in Texas, Louisiana and Arkansas in answer to a questionnaire on sucker rod operation. The questions asked were: (1) Method of installation in well? (2) Precautions taken against bending? (3) Do you use protectors in crooked holes? What type? (4) Do you allow hammering to break joints? (5) Protection of rods when not in use, particularly threads? (6) Protection against sudden loading (inertia or impact loads)? (7) Protection against whipping or dragging while hauling? (8) Any protection against corrosion? (9) In your opinion, how can the useful life of sucker rods be increased?

In general, the replies indicate that rods are being handled with care in order to prolong life and prevent breakage, although possibly not all possible precautions are taken in all cases.

In an effort to ascertain the extent of agreement between general field practice in the use and care of sucker rods, and the recommendations in Poster No. 7 of the American Petroleum Institute, a questionnaire was mailed a large number of operators in Texas, Arkansas and Louisiana. A paper on "Care of Sucker Rods" was read at the last meeting of the Midland chapter by E. S. Durward of the Shell Petroleum Corp., Dallas, Tex. Both the poster and the paper are excellent and a careful reading of them is advised.

This paper, under the head, "Precautions in Handling Sucker Rods," appears in this issue of The Oil and Gas Journal.

The questions of the questionnaire with summarized answers were as follows:

Question No. 1. Method of Installation in Well? All replied—boxes and pins were cleaned. Four replied—24-inch pipe wrenches were used; four replied—rods were made up in doubles before running; three—rods were run in singles; one—rods were run in trebles; eight replied that precautions were taken against bending.

Question No. 2. Precautions Against Bending? Seven replied—rod hangers were used; five replied—rods were laid out on walk; two replied—rod racks were used; one replied—lower girt in derrick was removed to allow carrying rods out without bending.

Question No. 3. Do You Use Protectors in Crooked Holes? What Type? Ten replied—"Yes." Three—"No."; four—"No crooked holes"; five replied—"Wood"; three—"Metal"; two—"Wood or metal."

Question No. 4. Do You Allow Hammering to Break Joints? Three replied—"Yes"; three—"No"; four—"Occasionally"; one—"Only on shallow wells"; one—"Rarely ever allow but do not think it as damaging as generally considered"; one—"Do not encourage it." At this point, let us refer to paper of Mr. Durward mentioned earlier. He states, "I know of one area where a company had excessive pin breakage, out of 64 broken pins examined there were 62 of the boxes measured long on one side and all showed evidence of hammering."

Question No. 5. Protection of Rods When Not in Use, Particularly Threads? All replied—keep rods packed straight; five—keep joints oiled and covered with burlap; five—keep joints oiled; three—paint joints; one—clean and paint joints.

Question No. 6. Protection Against Sudden Loads (Inertia or Impact Loads)? Four replied—"None"; five—"Counterbalancing"; three—"Counterbalancing with maximum stroke and minimum speed"; two—"Shock absorbers"; one—"Use special hanger but see little good from it."

Question No. 7. Protection Against Whipping and Dragging While Hauling? Four replied—"Do not drag rods"; two—"Move in singles with truck and trailer"; one—"Haul in bundles and bind securely"; one—"Use flat truck beds"; one—"Fasten to avoid sag in middle and whipping at ends"; one—"Load carefully with pins on front end of truck or wagon."

Protection Against Corrosion

Question No. 8—Any Protection Against Corrosion? Eleven replied—"None"; four—"Use of grease or oil only"; two—"Experimenting with galvanized rods."

Question No. 9. In Your Opinion How Can the Useful Life of Sucker Rode Be Increased? This question indirectly embraces the preceding eight questions but allows a wider range for replies. Six replied—"Keep threads clean"; six—"Proper counterbalancing"; four—"Keep joints well made up"; four—"Slower pumping motion"; three—"Use of elevators"; two—"Hanging rods in derricks"; two—"Keeping guides changed when needed"; one—"Weeding out all damaged rods"; one—"Keep derrick in good condition"; one—"Remove complete string of rods after fishing"; one—"Do not hammer joints"; one—"Use proper length of stroke"; one—"Use larger rods on heavy wells"; one—"Plug off salt water"; one—"Treat it like it was the last string of rods on earth."

The large number of replies to this questionnaire coming, as they did, from men directly in charge of field work proves a very great interest not only in this subject but in the conservation of materials generally. A willingness to cooperate and exchange ideas and information is present today that was lamentably lacking a few years ago. At present, it should not be difficult to ascertain the generally accepted theory and practice in any line of the oil-producing industry. Probably the major task today is training the men to perform their work correctly until they know no other way.

*Presented before the Galveston meeting (September 5 and 6, 1929) of the Texas-Louisiana-Arkansas district of the American Petroleum Institute, division of Development and Production Engineering.

Metallurgy of Hard-Faced Rotary Bits

Must Be Able to Cut Formation Encountered and Transmit to the Cutting Edge the Energy Delivered by the Source of Power

By W. A. Wissler[1] and C. W. Metzger[2]
[1]Research Engineer, Union Carbide and Carbon Research Laboratory. [2]Sales Engineer, Haynes Stellite Co.*

ABSTRACT

The function of the steel in the body of the bit is discussed, and emphasis is placed upon the proper working and heat treating of such steel; methods and precautions used in hard-facing bits are next discussed, oxy-acetylene welding being preferred; finally the properties of hard-facing metal are discussed; "red hardness" — a comparison of hardness at working temperatures — is illustrated with charts; in addition the paper is illustrated with micropho ographs of overheated steel and still with proper grain structure, and properly fused facing.

The metal or metals in an oil well bit must perform two functions. One of these is to cut or crush the rock or other formation encountered in the hole, and requires a cutting edge that is hard when in use and highly resistant to abrasive wear. The other is to back up the cutting edge and transmit to it the energy delivered by the source of power; this requires a metal having considerable toughness, strength and resistance to shock. These uses are so different in character that no one metal or alloy could be expected to be the most suitable for both.

For many years both cutting edge and body were made of one piece of metal, and it was necessary to select a steel that combined both of these requirements to the highest possible degree. More recently the development of the hard-facing process has enabled the driller to combine two or more different metals, using a strong, tough steel for the body of the bit, and a wear-resisting, although somewhat brittle, metal for the cutting edge. The use of two metals, each having been selected as being the best for its particular purpose, has increased the efficiency of the bit and has resulted in great drilling economies that need not be discussed here. The advantage of using hard-faced bits is now admitted almost universally.

A discussion of the metallurgy of hard-faced bits must therefore be divided into three sections. The first of these deals with the steel used for the body of the bit; the second concerns itself with the character of the welded junction between the steel and the hard-facing alloy, and the third discusses the alloys used for the cutting edge. Each subject will be taken up in the order given.

The Steel in the Bit

The main duty of the steel in the body of the bit is to deliver the power for drilling to the cutting edge. To do this it must be tough enough to resist drilling stresses without breaking, stiff and hard enough to properly support the hard-facing metal, and in addition, of such a nature that it may be repeatedly redressed and hard faced with a minimum of deterioration in quality.

Many brands and compositions of steel are used for fishtail bits. Some of them are plain carbon steels—others are alloy steels containing manganese, chromium, nickel, vanadium, etc. Each driller has selected one or more steels that he thinks are the best for his particular conditions. Most of them, perhaps all of them, are good steels for the job. Some of them will obviously stand more difficult and severe operating conditions than others, but each of them is preferred by someone in the drilling game.

Fortunately, it is easy to buy good steel. Steel mills and laboratories have spent, and are spending, large amounts of money and time in making steel of high quality by controlling carefully every step in its manufacture. It is, however, unfortunately true that a good steel may be partly or wholly ruined between the time that it leaves the maker's hand and the time that it is put to use. It is easily possible to handle the best steel in such a way that the final results obtained from its use are much less satisfactory than could be obtained from a cheaper steel properly used

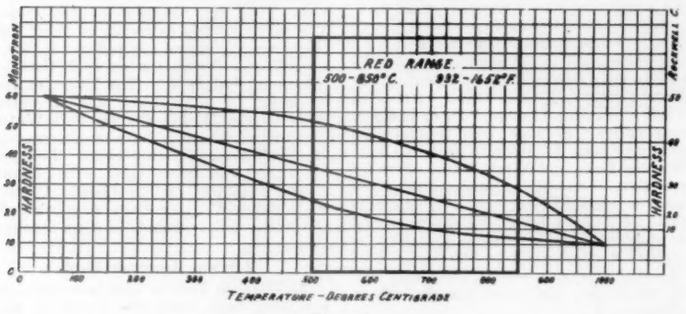


Figure 7.

Temperature and Conditions Important

Whenever steel is heated or worked it is essential that the proper temperature and conditions be used. Owing to the great variety of steel used for bits, it is impossible to lay down definite temperatures or conditions. General rules may be discussed, and detailed information may be secured from the manufacturer of the particular steel in use. The properties of a steel are largely dependent on the manner in which its constituent elements are combined, and also on the size of the grains into which they are crystallized. Other things being equal, the most desirable structure is one consisting of small grains, such as is found in a steel that gives a fine structure when broken. This condition is necessary if the steel is to have high strength and impact value. Anything that tends to leave the steel with an excessively large grain should therefore be avoided.

One of the surest ways to produce a steel having exceptionally large grains is to overheat or burn it. Burning a steel consists in heating it to such a temperature that the grains become large and the grains boundaries are greatly weakened. Such steel is very weak and it is impossible to restore its proper properties by any method short of remelting and working. Rather high temperatures, in the neighborhood of 2,400 degrees Fahrenheit or higher, are needed to produce badly burned steel, but it is possible to burn the thin edges of a steel bit if heating for forging is done in too hot a furnace. If this should happen the only remedy would be to cut off enough of the bit to remove the burned portion. Badly burned steel will usually crack during forging, and a simple test consisting of attempting to forge or examining the strength of a piece of burned steel will show the great decrease in toughness resulting from such treatment.

Specific Temperature Range

Forging should be carried out at a specific temperature range with the idea of starting at a certain temperature and finishing at a certain temperature, and the steel should be reheated rather than heated too high at the start to enable the forging to be completed with only one heating. Forging should not be done on a bit below this temperature range. Working the bit cold, particularly if the fishtail is stood on edge and the gauge is being forged, will likely start very small cracks inside the body of the metal. These cracks may perhaps be so small that they do not cause any immediate damage, but they have a tendency to spread under the stress that the bit encounters while in the hole. They will also tend to spread on further reheating or working. The importance of proper forging temperatures cannot be overestimated.

Hardening and drawing should be done according to the manufacturers' instructions. A hard-faced bit can usually be quenched in oil without starting cracks. Often air cooling from the proper temperature will impart the necessary properties to a hard-faced bit. Quenching in water should be generally avoided.

Careful inspection after forging or heat treating will usually reveal any cracks or other defects that might cause considerable trouble if undiscovered until the bit is in use.

While the question of proper temperature is emphasized and is very important, it does not need to be held to such close limits that pyrometers are necessary. Variations of 50 degrees more or less are allowable, but the operator should be sure that he knows the proper temperatures and that he is able to judge them very closely. In case of doubt, the cost of a pyrometer would doubtless be repaid many times over.

It may be readily seen that considerable care is necessary if the steel is to be kept in its best possible condition. It is, however, fortunately true that steel will perform satisfactorily even though it is not in its best possible condition, and that therefore a certain amount of variation from the above recommended practices is possible. It is only when trouble of various kinds is encountered that it is necessary to examine the practice in use, and whenever this is necessary investigation should be conducted along the lines suggested by the above discussion.

Junction of the Metals

The junction of the hard-facing metal and the steel base must be at least as strong as the hard-facing metal itself, as otherwise excessive breakage would occur at this point.

A strong joint may be made by either the oxy-acetylene or metallic arc welding process, but for the hard facing of bits the oxy-acetylene process has certain definite advantages. One of these lies in the fact that the arc welding process results in a loss of metal amounting to 8 or 10 per cent of the amount of rod used, which occurs by volatilization or by spattering and is independent of any metal lost by the failure to reclaim stub ends. When ordinary iron or steel welding rod is being used, the loss is of but little consequence. Hard-facing metals, however, are high in price as compared to steel, and the loss of 10 per cent of the metal becomes quite an item. Any comparison of the costs of the two processes must take this point into consideration.

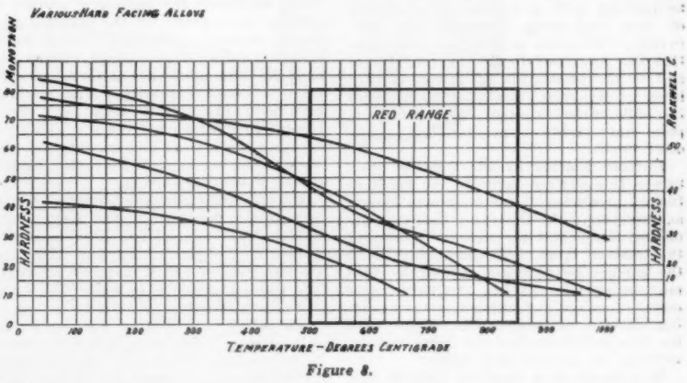


Figure 8.

Another advantage of the oxy-acetylene process is that the metal built up on the cutting edge may be shaped much more accurately, with the result that less metal is required and very little grinding is needed to prepare the bit for use. This is quite an item whenever a large number of bits are to be hard faced.

Still another advantage lies in the fact that a more uniform deposit may be obtained. In ordinary welding it is desirable to secure a certain amount of interalloying of the two metals, a result known to the trade as "penetration." When both metals are similar in composition, the result is beneficial and produces a strong weld. The hard-facing process, however, uses two metals of different compositions, and hard-facing metals lose a considerable part of their wear-resisting value if they are diluted with iron.

Keep at Minimum Thickness

The best process is therefore the one that keeps the interalloyed zone at a minimum thickness. The metallic arc process results in the production of an interalloyed zone from one-eighth to one-fourth inch thick, while the oxy-acetylene process may be carried out so that practically no dilution takes place. The result in the one case is a deposit the lower part of which is highly diluted with iron and hence inferior in wear-resist-

*Presented before the Galveston meeting, September 5-6, 1929, of the Texas-Louisiana-Arkansas District of the American Petroleum Institute Division of Development and Production Engineering.

ing properties, while on the other hand the oxy-acetylene process produces a deposit having uniform properties throughout its entire depth. It is thus seen that the effective thickness of the deposit is greater if the oxy-acetylene process is used.

These advantages have resulted in the general use of the oxy-acetylene process for work of this type.

It is unnecessary to describe the process of hard facing in detail, as the manufacturer of the alloys used will furnish all necessary instructions to enable any competent welder to produce satisfactory hard-faced bits. As a general rule it may be said that three points should be particularly noted. One of these is to use a flame containing considerable excess acetylene; another is to avoid covering any particles of scale; the third is to allow the hard-facing metal to flow on the sweating surface of the steel. As a general rule the bit should be preheated before welding, unless it has been thoroughly annealed.

Excess Carbon Absorbed

When the steel base is heated with a reducing flame part of the excess carbon in the flame is absorbed by the steel, the net result being the production of a thin surface of extremely high carbon steel. It is easily possible to carry this carburization to such a point that the steel will be covered with a surface of a carbide of iron containing almost 4 per cent carbon. Whether or not the carburization has proceeded to this degree, the result is the production of a thin surface layer of carburized steel, that, because of its high carbon content, has a melting point appreciably lower than that of the steel itself.

Further heating by the welding torch brings this surface layer to the point of fusion, producing the phenomenon known as sweating. At the same time the reducing flame and the carbon content of the surface layer will thoroughly clean the surface by reducing any oxides that may be present. When the hard-facing metal is melted and applied to the sweating surface, it presumably alloys with the thin molten surface and flows readily, wetting the surface thoroughly.

The result is a junction that is uniform in strength, and at least as strong as the hard-facing metal itself, having a very sharp dividing line, the interalloyed zone being less than 0.001 inch in thickness.

Hardness Uniform

Experiments determining the hardness of the deposit have shown that its hardness is uniform down to within a few thousandths of an inch of the steel base, and analyses show that the metal has been undiluted by iron. When the welding is properly done a junction of the two metals such as is shown in the photomicrographs will be fully as strong as the hard-facing metal itself, and if samples are prepared in such a shape that they may be broken on a testing machine, the break will usually occur through the hard-facing metal fairly close to the junction. In the case of one surfacing metal the breaking load will be about 40,000 pounds per square inch.

During the welding process the steel is of course heated more or less, and this heating will affect the grain size of the steel. The steel in the finished weld is in fair condition, but obviously not in its best condition. The enlargement of the grains is of course most pronounced near the junction, where the highest temperatures were developed. Back of the zone the grain size decreases rapidly. Many users find that the bit as welded is satisfactory. If the best properties are necessary, the welded bit may be heat treated by being quenched in oil and drawn or normalized. Samples of the welded metal were heated to 1,600 degrees Fahrenheit and quenched in oil, others were normalized by being heated to 1,600 degrees Fahrenheit and air cooled. Either of these treatments results in a great improvement in grain size. Quenching hard-faced bits in water is not recommended, as it may result in cracks.

Hard-Facing Alloys

The most desirable property of a hard-facing metal is a high degree of ability to resist wear. This would, however, be of no value if the alloy were so weak and brittle that it would break or chip away in the hole, and therefore in addition to hardness the alloy should be strong and tough enough to resist the shocks and blows that it inevitably receives. Still another essential property is that the alloy must be of such a nature that it can be applied to the bit as a welded surface, uniform in quality and strength, and reasonably free from cracks and blowholes.

Hardness and resistance to wear are, to some extent, connected in the relation of cause and effect, and it is sometimes thought that a comparison of the hardness of two metals will predict their comparative value for hard facing. This is true, but only true if the hardness is measured when the alloy is in the same condition as when it does its work, which, as will be shown, means that its hardness must be measured at a red heat. Such measurements give a resulting figure that is called "red hardness."

Determination of the red hardness of different alloys will show their comparative value as wear-resisting materials, assuming that both are strong enough to stay in place on the bit. As far as is known it is the only test that will show comparative resistance to wear with the exception of an actual trial under operating conditions.

Energy Converted Into Heat

A large part of the energy used by cutting tools is converted into heat, which is liberated on the cutting edges or contact surfaces, and raises a very thin layer of metal to a surprisingly high temperature. These temperatures cannot be detected by ordinary means, but have been measured by laboratory experiments requiring extremely accurate and sensitive instruments. In many cases temperatures as high as 600 degrees Centigrade or higher have been measured on cutting and chipping operations, both when operating dry or "wet."

The liberated heat is of course rapidly conducted away into the body of the bit, but as long as the bit is in operation its extreme cutting edge will be operating at temperatures that are well within the red range. This temperature exists only in

(Continued on Page 146)

Salt Water Disposal in Texas Fields

Problem Has Become a Matter of Concern as a Result of the Statutes Governing Streams and Underground Water Pollution

By S. W. Oberg
Chief Engineer, Humble Oil & Refining Co.*

ABSTRACT

This paper deals briefly with the disposal of salt water in the oil fields of Texas. Disposal methods are classified and described as (1) Cavity wells, (2) Direct run-off to streams and sea, (3) Seepage into the ground and evaporation, (4) Storage during dry periods and run-off to streams during floods, and the results are given as obtained thereby in various fields.

The disposal of salt water in the oil fields of Texas has become a matter of concern as a result of the statutes governing streams and underground water pollution. Local conditions govern the method that must be used to get the most economical results. The methods used are: (1) Cavity wells, (2) direct run-off to streams and the sea, (3) seepage into the ground and evaporation, (4) storage during dry periods and run-off to streams during floods.

Cavity wells are used extensively in salt water disposal in the Gulf Coast fields. This method has been used successfully at Liberty, Dayton, Hull and Damon Mound for a number of years. The usual practice is to collect the water in earthen pits and pump it to the cavity wells which are located on top of the salt domes. This method has been recently successfully applied in the Hendricks Field, Winkler County, in West Texas, where the wells are drilled to the top of the Barstow sandstone, at which point casing is cemented to prevent the pollution of upper fresh water sands. Some of these wells are reported to take as high as 40,000 bbls. daily, with pressures ranging from zero to 75 pounds. The depths of the wells are from 305 feet to about 1,600 feet.

Direct Run-Off to Sea

Due to their geographical location, direct run-off to the sea is used at Goose Creek and West Columbia. Run-off to rivers is used in the Powell, Mexia and Luling Fields and, for the present, in the Salt Flat Field. The Powell Salt Water Co. was organized in the Powell Field. Right of ways were purchased across private lands and down Chambers and Richland Creeks to the Trinity River for disposal of salt water. Several law suits have been brought against the company, claiming damage to lands adjoining creeks which so far have been successfully defended.

In the Luling Field, water is ditched to several creeks and flows down these to the San Marcos River. The same method is in use in the Salt Flat Field, but steps are being taken to store the salt water during dry periods and allow it to escape during high water periods in order to reduce the salinity in the San Marcos and Guadalupe Rivers. At Breckenridge most of the salt water escapes into the Gonzales Creek, then down to the Clear Fork of the Brazos River. Gonzales Creek is generally recognized as a salt water creek through the Breckenridge Field. At Vernon, the Wilbarger Salt Water Co. was formed to pump water to the Pease River, a brackish water stream. Water is delivered to a gathering pit at the water company's pump station by the various operators, where it is metered, and each operator charged a fixed rate per barrel prorated by the disposal company.

Seepage and Evaporation

Seepage and evaporation can be utilized in most parts of Texas excepting the East Texas and Gulf Coast territories where the rainfall is equal to, or exceeds, evaporation. Seepage and evaporation pits have been successfully used at Cisco, Wichita Falls and West Texas. Strictly speaking, evaporation pits probably lose more water by seepage than by evaporation. In the Wichita Falls, Cisco and San Antonio areas, the evaporation is such that approximately 800 square feet of surface is required to evaporate one barrel of salt water per day throughout the year.

In West Texas, where the evaporation is greater, about 650 square feet of surface is required to evaporate one barrel per day. In the San Antonio area, an earthen tank covering 100 acres would evaporate 1,960,000 bbls. of sale water during a year. While it is desirable to have pits on a porous soil, pollution of domestic water wells will result if care is not exercised in selecting sites. Pits have been abandoned in several instances because seepage had polluted underground fresh water supplies.

According to analysis of water at Cisco, Breckenridge and Wichita Falls, about 7½ tons, or 118 cubic feet of salt, or solid matter, will be produced in one year by the evaporation of 1 bbl. of salt water per day. This amount of salt may cause trouble in time. To get the maximum efficiency from evaporation pits, they should be shallow and the bottoms as level as possible. If the ground is not level, pits may be built one above the other or terraced as a series of shallow pits are better than one deep pit.

Storage and Run-Off

Storage during low water periods and run-off during high water periods is being used at Orange and Sour Lake. This method is also used in the Wichita Falls and Breckenridge districts where water is released from storage pits during periods of heavy rainfall. The Orange Salt Water Co. was formed at Orange oil field and water is delivered by the operators to a gathering pit. A water system of proper pumps and a cast iron pipe line was installed. The salt water is pumped to a reservoir covering approximately 160 acres in a marsh south of the Orange oil field. Water is released from this reservoir during high water periods. It has been necessary to enlarge this system because the amount of water being produced exceeded estimates made when the system was first installed.

The Hardin County Salt Water Co. was organized at Sour Lake and is now operating under an injunction. This injunction was obtained by rice growers who are taking water out of Pine Island Bayou and the Neches River and who claimed that salt water from the Sour Lake Field was destroying their crops. The salt water is delivered to three different reservoirs and allowed to run down Pine Island Bayou during such time as the court designates. The levees of the reservoir at Sour Lake are inspected daily by the Hardin County Salt Water Co. and at intervals by a representative of the Jefferson County court. Samples of water are taken from Pine Island Bayou regularly by the Hardin County Salt Water Co. for their protection in the event suits should be filed against them.

Earthen Reservoir Used

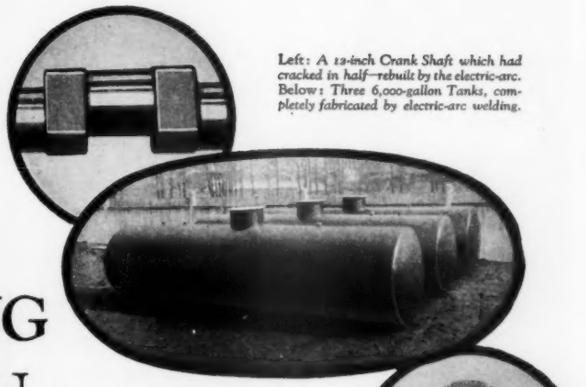
At Raccoon Bend a cast iron pipe line has been built from the collection pits in the field to an earthen reservoir covering approximately 100 acres. Salt water is stored in this reservoir during rice irrigating seasons and allowed to escape therefrom into the Brazos River only during high water periods.

In all fields where salt water is handled, a cast iron pipe line is used due to the corrosive action of the salt water. Centrifugal pumps, which are generally used for pumping salt water, should be either of all iron or all bronze, as electrolytic action will soon destroy them if made partly of iron and partly of bronze or steel.

In fields where salt water is allowed to run directly into the streams or sea, or when it is stored during dry periods and allowed to run into streams during floods, great care must be taken that stream pollution from waste oil does not occur. The Federal Government is now taking steps to curtail pollution of navigable waters and it is necessary that water pass through a skimming plant in order to remove all waste oil. When salt water is run directly into streams, complaints from pollution will be greatly reduced if suitable skimming plants are installed and all waste oil or b.s. is removed, as the average layman, upon seeing oil on a stream, will jump to the conclusion that it is also polluted with salt water when there may not be any salt water entering it.

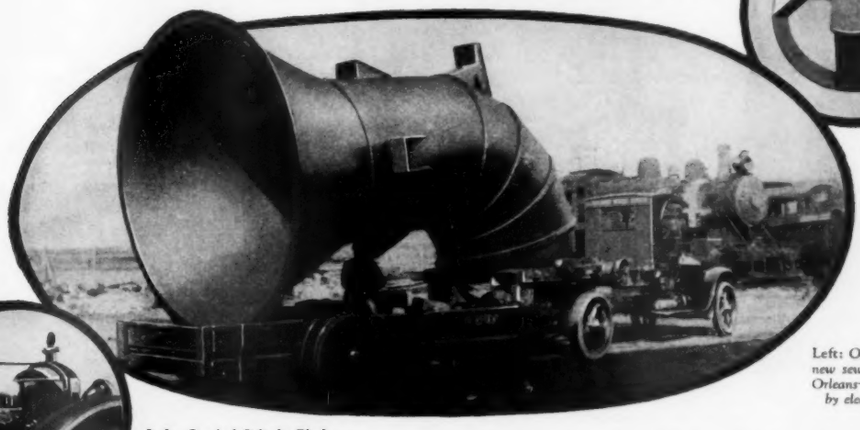
*Presented before the Galveston meeting (September 5 and 6, 1929) of the Texas-Louisiana-Arkansas District of the A. P. I. Division of Development and Production Engineering.

The EXPERIENCE of Others *proves what* ARC-WELDING *can do for* YOU

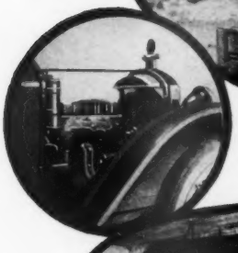


Left: *A 12-inch Crank Shaft which had cracked in half—rebuilt by the electric-arc. Below: Three 6,000-gallon Tanks, completely fabricated by electric-arc welding.*

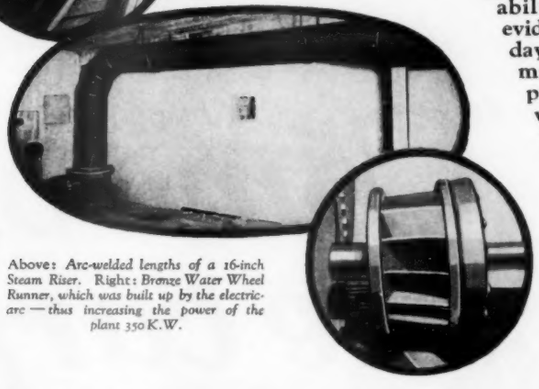
Right: *Generator Head, made of arc-welded structural steel units.*



Left: *One of the units in the new sewage system of New Orleans—entirely fabricated by electric-arc welding.*



Left: *Cracked Cylinder Block, repaired by electric-arc welding.*



Above: *Arc-welded lengths of a 16-inch Steam Riser. Right: Bronze Water Wheel Runner, which was built up by the electric-arc — thus increasing the power of the plant 350 K.W.*

HERE is evidence of the remarkable versatility and dependability of electric-arc welding—evidence that is piling up day after day, and in every industry where metals are being joined. Here is proof that—whatever *your* industry, whatever *your* welding problems—you can profit by the manifold advantages of arc welding. ¶ Pioneers in electric-arc welding—Wilson places at your disposal its great accumulation of welding experience and knowledge. You are invited to consult its engineers—no obligation.

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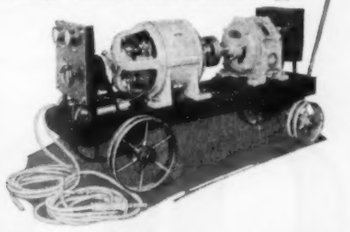

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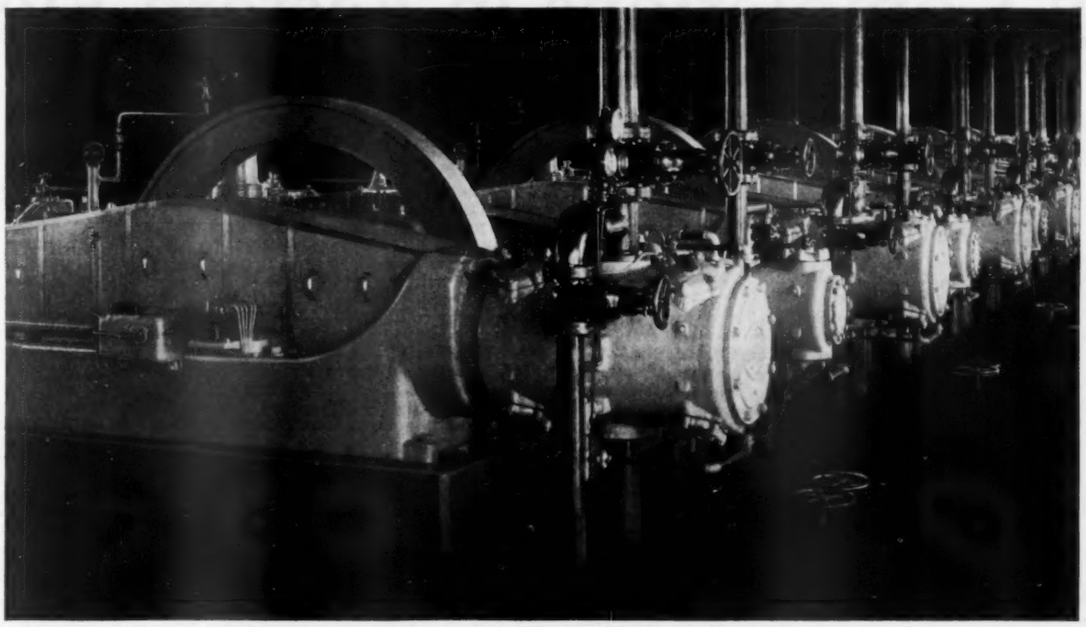

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Many Completions in Eastern Fields

All in Defined Territory and No Big Producers. August Expected to Show Gain Over July in Completions and Output

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Sept. 2.—A long list of completions marked development work in the Eastern fields the past week. All the wells were in defined territory and there were no unusual producers. Full reports for August are expected to show a larger number of completions than there were in July, and a slight gain in volume of production. Little new work is expected to start until the crude market improves.

On Big Island Creek, Murphy district, Ritchie County, West Virginia, Riddle & Baccus have completed in the second Cow Run sand No. 3 on the Mayle heirs' farm. It is showing for a 5-bbl. pumper. In Glenville district, Gilmer County, the Pittsburgh & West Virginia Gas Co.'s No. 3, on the John W. Wolfe farm, is dry in the Big Injun sand.

On Sugar Creek Run of Reedy Creek, Reedy district, Roane County, the Hope Construction & Refining Co. has completed and shot a test on the James Vandal farm. It is a 10-bbl. pumper in the Big Injun sand. On Burning Springs Run, Burning Springs district, Wirt County, Roberts Brothers have completed in the Cow Run sand No. 150 on the Rathbone Oil tract. It is showing for a very light pumper.

On Sycamore Creek, Sherman district, Calhoun County, Godfrey L. Cabot has completed a test on the Charity Poling farm. It is a 5-bbl. pumper in the Big Injun sand. In Spencer district, Roane County, the Federal Oil & Gas Co. has a duster in the Cow Run sand at No. 1 on the L. C. Vandale farm.

In Ellsworth district, Tyler County, J. H. Pentz has completed a second test on the Timothy Smith farm. It is a gasser in the Big Injun sand. In Clay district, Monongalia County, the Chartiers Oil Co. has completed in the same formation a test on the Hillsbury farm. It will probably be drilled to the lower sands later.

Dry in All Sands

In Mannington district, Marion County, J. J. Allen's test on the W. S. Snodgrass farm is dry in all sands. In Church district, Wetzel County, the Maxon Oil Co. drilled down from the Big Injun sand No. 12 on the Sarah Shea farm. It is showing for a light oil producer. In Mannington district, Marion County, Sutton Brothers are hauling rig material to a location on the Sutton Brothers' farm. In Church district, Wetzel County, the Carnegie Natural Gas Co. is placing rig material at a location on the Alice Edgel farm.

Located on Big Laurel Creek, Union district, Clay County, the Big Laurel Oil & Gas Co. has completed and shot in the Cow Run sand No. 3 on the Otto Bowman farm. It is showing for a 10-bbl. pumper. In Reedy district, Wirt County, 1 mile north of production, the Hope Construction & Refining Co. has completed a test on the M. Williams farm. It is dry in the Berea grit and will be drilled to the lower sands.

On Big Island Run, Clay district, Wirt County, Dailey Brothers have completed a test on the Thomas Lewis heirs' farm. It is showing for a 5 or 6-bbl. pumper in the Cow Run sand. The location is 1,200 feet northeast of the same company's test on the James L. Adams farm. On McCord Branch of Days Run, Clay district, Monongalia County, the Philadelphia Oil Co. has completed in the Big Injun sand a second test on the William L. Keck farm. It is good for 35 bbls. a day.

In Reedy district, Roane County, the Heck Oil Co. has now completed No. 5 on the A. D. Tallman farm. It is an 8-bbl. pumper in the Berea grit. In the same district, the Hope Construction & Refining Co.'s No. 1,105, on the L. Vandale farm, is a 15-bbl. pumper in the same formation. In Lee district, Calhoun County, the Hope Natural Gas Co. has a gasser in the Big Injun sand at No. 7,261.

Gasser in the Maxon

In DeKalb district, Gilmer County, McCall & Co.'s test on the B. T. Frymyer farm is a gasser in the Maxon sand. In Carroll district, Lincoln County, the Allegheny Gas Corp. has a gasser in the Berea grit at No. 3 on the C. A. Curry farm. In McComas district, Cabell County, C. C. Wolfe has a gasser in the Gordon sand at a test on the E. B. Conley farm. In the same district, the Cambridge Gas Co. has a gasser in the same formation on the William Ray farm.

In Washington district, Boone County, the Hope Natural Gas Co. has a gasser in the Berea grit at No. 7,243 on the J. D. Allen farm. In the same district, the Owens Bottle & Machine Co. has a gasser at a test on the J. D. Powell farm. The same company has a gasser at a test on the J. W. Chambers farm.

In Carroll district, Lincoln County, L. R. Sweetland has completed No. 46 on the John Holton farm. It is a gasser in the Berea grit. In Jefferson district, Earl Cameron has completed No. 4 on the Golden Stone farm. It is a gasser in the same formation.

In Grant district, Cabell County, the Harshbarger Oil & Gas Co. has a gasser in the shale formation at a test on the C. & O. Railway property. In Washington district, Boone County, the Hope Natural Gas Co.'s No. 7,243 is a gasser in the Berea grit. In Geary district, Roane County, the United Fuel Gas Co.'s No. 3,953 is a gasser in the Big Injun sand. It is located on the M. J. and R. K. Ogden farm. In Walton district, the same company's No. 2,955 on the R. K. Littlepage farm is a gasser. In Sheridan district, Calhoun County, W. S. Dailey & Co.'s test on the Homer Jones farm is dry and abandoned.

Gilmer and Wood Counties

On Little Cove Creek, Troy district, Gilmer County, C. M. Bennett & Co. have completed a second test on the Dock Burton farm. It is a gasser in the Big Injun sand good for 1,000,000 feet. On Worthington Creek, Union district, Wood County, the South Penn Oil Co. has completed in the Berea grit No. 26 on the Kara F. Ralston farm. It is a 5-bbl. pumper.

On Jacobs Run, Ten Mile district, Harrison County, Varner Brothers & Dennington have completed in the Gordon sand a test on the Varner heirs' farm. It is showing for a 10-bbl. pumper.

In Cook district, Boone County, the Owens Bottle & Machine Co.'s No. 17 on the T. W. Bedford farm is dry and abandoned. In Scott district, Ira G. Sayer has a fair gasser. In Big Sandy district, Kanawha County, the Columbia Carbon Co. has a gasser in the Berea grit at No. 10 on the Quick Land Co.'s property. In Scott district, Putnam County, the Celia Oil & Gas Co. has a gasser at No. 4 on the John Tormey farm.

In the same district, E. H. Morford has a gasser at a test on the H. Tompkins heirs' farm. In Marsh Fork district, Raleigh County, W. H. Kirtley has a gasser. In the same district, the United Fuel Gas Co. has a gasser on the Rowland Land Co.'s tract. In Mannington district, Marion County, J. J. Allen has a duster at a test on the W. S. Snodgrass farm. In Church district, Wetzel County, the Maxon Oil Co.'s No. 12 on the Sarah Shea farm is a light pumper in the Big Injun sand.

In Sherman district, Calhoun County, the Hope Construction & Refining Co. has a rig completed on the F. S. Barr farm. On Camp Creek, Poca district, Kanawha County, the Chartiers Oil Co. has a rig up on the Siegel Shaffer farm. This location is 3,000 feet north of the test on the Mary Pauley farm. On Falling Rock Creek, Big Sandy district, the Buff Lick Oil & Gas Co. has a rig up on the Rebecca J. Young farm.

Drilling and Starting Tests

In Ten Mile district, Harrison County, the Wilson Oil & Gas Co. is hauling tools to a location on the John Carter heirs' farm. In the same district, the Hope Construction & Refining Co. is rigging up on the W. H. Douglass farm.

In Grant district, Ritchie County, the Rowland Oil & Gas Co. has started to drill on the Rowland heirs' farm. In Union district, Wood County, the Valley Mills Oil & Gas Co. has started to drill on the W. E. Sugden farm. In Grant district, Ritchie County, the Hudson Oil Co. has a rig up on the G. F. Crummett farm. In McKim district, Pleasants County, Adam Ward & Co. have started to drill on the George Varner farm. In Grant district, Ritchie County, Robert Elder has a rig up and tools at a location on the Charles Iams farm. In Murphy district, Pope Brothers have a rig up on the Jacob Living farm.

One-half mile below Elk Station, Sardis district, Harrison County, Hawthorne & Lancaster have made a location on the Ellis Marsh farm. In Lee district, Calhoun County, the South Penn Oil Co. has a rig up on the L. S. Garrett farm. In Sherman district, the Virginian Gasoline & Oil Co. has a rig up on the E. D. Hathoway farm. In Center district, the Gerwig Oil & Gas Co. is drilling on the M. Hardman farm. In Ten Mile district, Harrison County, the Wilson Oil & Gas Co. has started to drill on the J. Carter heirs' farm. In Grant district, Ritchie County, Swingle & Inghram are drilling on the George Morris farm. In the same district, A. G. Woodford has started to drill on the N. L. Layfield farm. In the same locality, S. G. Myers has started to drill on the Patrick McCabe farm.

In Grant district, Cabell County, the Harshbarger Oil & Gas Co. is rigging up on the Isaac Garlock farm. In Washington district, Boone County, the Osborne Development Co. has rig material at a location on the L. G. Roberts farm. In Geary district, Roane County, the Summers Oil & Gas Co. is rigging up on the Everet Wilson farm. D. W. Law & Co. have started to drill on the A. J. Pugh farm. In Sherman district, Calhoun County, Clem S. Morris & Co. are rigging up on the Sarah A. Kersey farm. In Sheridan district, Godfrey L. Cabot has made a location on the L. F. Morrison farm. In Washington district, Godfrey L. Cabot has a rig up on the G. W. Truman farm. In DeKalb district, Gilmer County, J. A. Kelly has started to drill on his own farm.

New Work in Raleigh

Raleigh County after a long period of idleness is coming to the front with some new work. Recently two gassers have been completed and now G. L. Cabot is drilling a test on a town lot in Raleigh, located on the McKinley Land Co.'s prop-

(Continued on Page 179)

PRODUCTION IN TRI-COUNTY FIELD REPORTED LARGEST IN ITS HISTORY

By Whit
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., Sept. 2.—According to reports the August production of crude oil in the Tri-County Field of Ohio, Daviess and Hancock Counties, was the largest in the history of the field, due largely to good wells found in the Bartlett Pool, southwest of Taffy, in Ohio County. This pool is gradually being enlarged, especially to the westward where the big wells on the Morgan farm are found. The wells in the Bartlett Pool are nearly as productive as they were in the famous Ambrose-Weller Pool, which lies to the north and east. The pool has been farther extended by the completion of what is called a 100-bbl. initial producer on the Sally Hoover farm, to the west of the Bartlett Pool proper and southeast of the good wells on the Morgan farm. The Hoover well is just north of the Barnett Creek Church. Much undrilled territory surrounds it.

Another well that is being watched is the Creek Drilling Co.'s second well on the Hamilton lease in the St. Joseph Pool, in the extreme western part of Daviess County. This well at a depth of 1,400 feet developed a thicker sand than did the discovery well on the same farm, and is expected to be a good producer when completed and put on the pump. If it makes a commercial producer it will be the fourth for the pool and all bunched close together. Preparations for drilling up the section are well under way by the discoverers of the pool, who have virtually all of the territory leased up. A second rig is en route to the new pool for the starting of another well as soon as No. 2 Hamilton is completed. McMahan and others are drilling a test on the W. G. Mattingley farm, about a mile away from the present producers in the pool.

Good Wells in Ohio County

Good producing wells are reported from the Ohio County area since the last review of the field, most of them centered around the rich Bartlett, Morgan, Trodgen, Kirk and Duke farms, in the Bartlett Pool, although enough good finds are being made in the Friendship Church area and other parts of Ohio County. Daviess County does not show the activity that it did during the past several months. Drilling in the Utica Field of this county has slowed down with the opening up of territory known by oil men as the Owensboro Field, although the big work of the field is centered north of Hartford, the county seat of Ohio County, which is also rapidly growing as an oil center.

A summary of the week's work in the Kentucky fields shows 26 completions, 21 producers with an initial production of 1,765 bbls., 3 dry holes and 2 gas wells.

County—	Comp.	Oil wells	Prod.	Dry	Gas
Ohio	17	16	1,595	1	0
Daviess	6	5	170	1	0
Caldwell	2	0	0	0	2
McLean	1	0	0	1	0
Total	26	21	1,765	3	2

Ohio County Wells

In the Bartlett Pool, the Ohio Oil Co. has drilled in Nos. 8, 9, 10, 11, 12 and 13 on the James A. Kirk 141 acres, just west of the Ellis Bartlett farm, which has developed such large producers. The Kirk

(Continued on Page 180)

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MEN KNOWN IN OILDOM

Anthony Gibbon

At 28 Anthony Gibbon is managing director of an organization operating a 1,000-bbl. daily crude capacity refinery in Memphis, Tenn., probably the youngest such executive in the industry.

Mr. Gibbon was born of English parents in Mexico City. When the World War flamed out in Europe he concealed his age and enlisted in the British Army. He had spent two years in the trenches before the military authorities discovered his right age. He was discharged. For two years he served as a chancellor of the Mexican Embassy in London. He returned to Mexico for a short time and then worked as a newspaper reporter in Savannah, Ga., and in Baton Rouge and Monroe, La.

In Monroe in 1925 he was covering the search for oil in that part of the State, with a few gas blowouts in LaSalle Parish relieving the monotony of reporting dry holes. He acquainted friends and relatives in England with these developments. They became interested and leased all the LaSalle Parish holdings of the Urania Lumber Company, an English concern, consisting of several thousand acres of timber and cut-over land. They made Mr. Gibbon a director and general manager of the Urania Petroleum Company. Under his direction they drilled five wells, all dry, and would have quit then had he not persuaded them to try one more shot.

That sixth wildcat opened the Urania Field on March 23, 1925. Mr. Gibbon retired with the others from further drilling activity, bought a handsome villa on the Riviera and planned a life of luxury. Inactivity palled and he moved back to Monroe and entered the drilling contracting business, meanwhile looking after the remaining interests of the Urania Petroleum Company. The company went into plans for building a refining plant when he learned of one—four shell stills, one pipe still, fractionating towers, storage equipment, a complete plant, in fact—in Memphis which could be bought. He bought it.

PERSONAL PARAGRAPHS

Ted Holmes, who has been spending a few months in Petrolia, Ontario, on furlough, has returned to the Persian oil fields.

* * *

Sidney Powers, chief geologist of the Amerada Petroleum Corporation, Tulsa, has been making a tour of the West Texas fields during the past 10 days.

* * *

Paul M. Buttermore, geologist for the Transcontinental Oil Company, Fort Worth, Tex., is making an automobile trip back to his home at Bradford, Pa., on his vacation.

C. S. Youngblood, purchasing agent of the Gulf Production Company, Fort Worth, Tex., is in Phoenix, Ariz., on business.

* * *

Dean Rollans, credit manager of the Wickwire-Spencer Sales Corporation, has gone to Pittsburgh, Pa., on a business trip.

* * *

George S. Garritt, manager of the United States Steel Products Company of San Francisco, arrived in London recently on a business trip.

* * *

J. A. Selby, chief scout for the Shell Petroleum Corporation in Dallas, Tex.. is spending his vacation in his old haunts around Shreveport, La.

* * *

Vinson (Bud) Perini, geologist and member of the firm of Merry Brothers & Perini, Fort Worth, Tex., is spending his vacation in Denver, Colo.

* * *

Dr. Gustav Egloff, technical director for the Universal Oil Products Company, spent several days in Tulsa and other Mid-Continent points last week.

* * *

George H. Lang, of Tulsa, chief scout for the Carter Oil Company, who has been spending his vacation in the Ozark Mountains, has returned to Tulsa.

* * *

T. W. Rhoades, production engineer of the Gulf Production Company, Fort Worth, Tex., has returned from a vacation trip to points in California.

* * *

F. J. Adams, general agent of the Gulf Production Company, Fort Worth, Tex., motored to California with his family for several weeks' vacation.

* * *

Howard Merry, of the firm of Merry Brothers & Perini, oil operators of Fort Worth, Tex., is making a tour of New Mexico in the company's interests.

* * *

E. N. Foster, assistant purchasing agent for the Gulf Production Company, Fort Worth, Tex., has returned from vacation spent in Medicine Park, Okla.

* * *

O. C. Needham, assistant production superintendent for the Gulf Production Company, Fort Worth, Tex., drove to California to spend two weeks vacationing.

* * *

Nic. N. Stetanescu of the Societe I.R.D.P., is making a tour of various oil fields of the United States to study modern American methods and equipment.

* * *

Underwood Nazro, vice president of the Gulf Production Company, Houston, Tex., who has spent the past two months in Switzerland, has returned to his office.

* * *

J. E. Redburn, in charge of the land department for the Midwest Exploration Company, Amarillo, Tex., spent several days in Fort Worth, Tex., on company business.

* * *

J. L. Ragan, formerly connected with the Marland Production Company, is now representing the Wickwire Spencer Sales Corporation, with headquarters in Pampa, Tex.

* * *

Adrian Moore, vice president and general manager of the Rycade Oil Corporation, Houston, Tex., has returned from an inspection of the company's holdings in Southwest Texas.

* * *

R. B. Strayhonn, in charge of the land department in Texas for the Transcontinental Oil Company, is spending part of his vacation at Comanche, Tex., where he formerly lived.

* * *

A. L. Krueger, of the land department of the Phillips Petroleum Corporation, San Angelo, Tex., made a trip to Fort Worth on company business during the week. Will Clark, head of the land department for the Delmar Oil Company, San Angelo, was also in Fort Worth on business dealings.

* * *

Officials of the Macmillan Petroleum Products Corporation, of Los Angeles, Calif., spent a week in El Dorado, Ark., in connection with plans for building a new 3,000-barrel capacity plant at Norphlet for which part of the equipment of the present 2,000-barrel El Dorado plant will be used.

L. E. Barrows, general manager of The Texas Company, Fort Worth, Tex., is spending several weeks vacationing in Colorado. He made the trip, with his family, by automobile.

* * *

Martin Trainer, foreman with the Prairie Pipe Line Company in Oklahoma, is spending a few days calling on old friends in Pittsburgh, Pa. He was formerly located in the Eastern fields.

* * *

M. A. Hardie, vice president and general manager of the Houston Gulf Gas Company and the Dixie Gulf Gas Company, Houston, Tex., is spending a vacation in Wyoming, his former home.

* * *

Joe Champlin, Enid oil man, has returned from an aerial vacation throughout the North. He piloted his own Stearman biplane. Mr. Champlin spent two weeks in Minnesota, Illinois and points in Canada.

* * *

V. V. Jacomini, executive engineer of C. F. Braun & Company, Alhambra, Calif., who for several years has managed the company's Dallas, Tex., branch office, has been elected a director of the company.

* * *

G. A. Pool, assistant production engineer for the Gulf Production Company, Fort Worth, Tex., is driving a new automobile back from Newport, R. I., where he spent his vacation. The trip East was made by train.

* * *

W. B. Sharp, president, and W. T. Campbell, secretary and treasurer, of the Mission Sales Company, Houston, Tex., have arrived in London and later intend to make a tour of the principal European oil fields.

* * *

John B. Corrin, Pittsburgh, Pa., president of the Hope Natural Gas Company and the Hope Construction & Refining Company, his wife and son are spending their vacation on Manitoulin Island in Georgian Bay, Canada.

* * *

R. Lyle Andrews, formerly of the Pure Oil Company, Houston, Tex., has joined the staff of the land department of the Rycade Oil Corporation and now is doing some special land work for the latter company in the Gulf Coast.

* * *

A. F. Winn, traffic manager for the Skelly Oil Company, Tulsa, made a trip via one of the Southwest Air Fast Express' trimotored Fords to Sweetwater, Tex., to take part in that city's airport opening. Mr. Winn was representing Erle P. Halliburton, president of the S.A.F.E. Company.

* * *

Two additions have been made to the Empire Gas & Fuel Company's staff at San Angelo, Tex. Fred Brasted, geologist of Fort Worth, recently of the University of Iowa, will do subsurface work, and Chester P. Sappington, scout, has been transferred from Duncan, Okla., to take Frank Bowser's place. Mr. Bowser has been transferred to Fort Stockton, Tex.

* * *

Parker B. Abbott, general sales manager for the E. H. Edwards Company, wire rope manufacturer of San Francisco, made a recent trip to the Mid-Continent territory, where he conferred with L. P. Gorsline, the company's representative in that field. His ultimate destination was Lincoln, Neb., to take delivery of an Arrow airplane, which he was to fly to California.

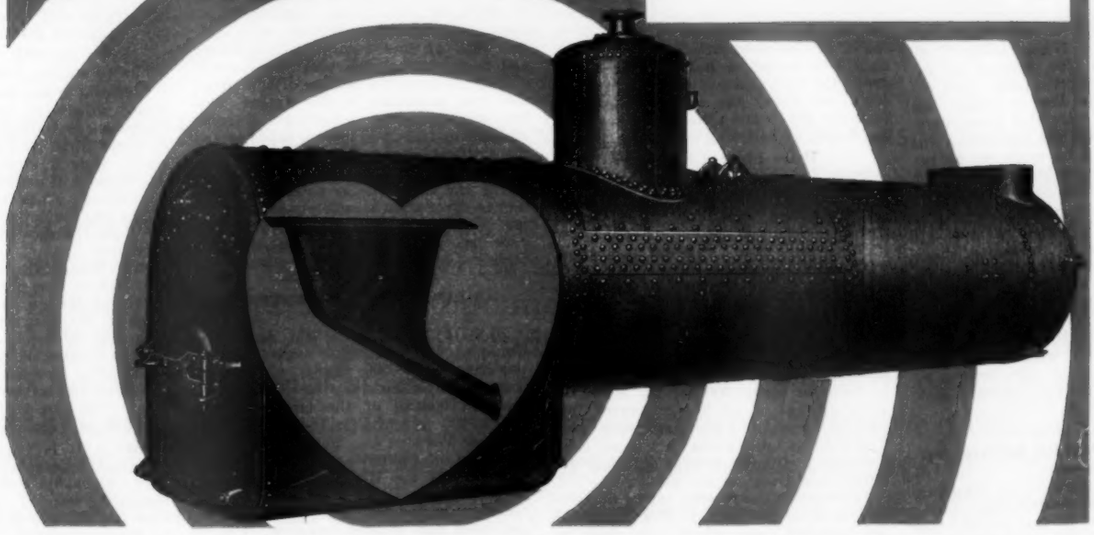
* * *

J. E. Hosterman, district geologist for the Amerada Petroleum Corporation at San Angelo, Tex., left this week by car with Mrs. Hosterman and daughter, for Rapid City, S. Dak. Mr. Hosterman will make a geological field trip from that city with members of the Kansas Geological Society, then will take a two weeks' vacation in Wyoming, Colorado and New Mexico, returning early in October.

* * *

K. D. Pardee, who recently returned to this country after completing a three-year contract with the Turkish Petroleum Company in Iraq, has been appointed district superintendent for the Texas Production Company for Montana, with headquarters in Conrad. Mr. Pardee has been making a trip through the oil fields of Colorado and Wyoming. In western Wyoming he joined A. R. Wilson, general manager of the Texas Production Company and the two continued the trip into Montana.

The HEART of the Boiler···



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Natural Gas Developments

FLOW OF NATURAL GAS IS SUBJECT OF STUDY

A study of the flow of natural gas through high-pressure transmission lines is being conducted by the United States Bureau of Mines, Department of Commerce, in co-operation with the American Gas Association. A major problem of this study is to compare the deliveries calculated from the gas pipe line flow formulas commonly used, with the metered deliveries from pipe lines in operation. In order to obtain such comparisons a series of tests has been made on 25 operating pipe lines in Kansas, Oklahoma, Louisiana, Arkansas, Texas and California.

In Serial 2942, recently issued by the Bureau of Mines, the results obtained from a few of the field tests are discussed. These tests deal with different rates of flow through the same size of pipe, obstructions, such as condensates, sand, or rust in the line, flow through different lengths of the same pipe line, and tests made when the input rate of flow was less than the output rate or when the output rate was less than the input rate.

Results indicate that under constant flow conditions with no obstructions in the line, the measured rates of delivery compare more closely with the rates of delivery calculated from Weymouth's pipe line flow formula than with those calculated from any of the other pipe line flow formulas. Where obstructions are present in the pipe, causing an excessive amount of friction, the actual delivery from the pipe line is always less than the delivery calculated from Weymouth's formula. On one line tested, the actual delivery was as much as 48 per cent less than the delivery calculated from Weymouth's formula.

The data available at the present time are not sufficient to establish definitely the effect of different velocities, diameters of pipe, types of joints, internal smoothness of the pipe, viscosity, supercompressibility, and chemical composition on the flow of gas through pipe lines. It is hoped that the final results of the pipe line flow study will establish the correct relations of all the factors affecting the flow of gas through high-pressure transmission lines.

GAIN IN GAS SALES REPORTED

American Gas & Power Co., subsidiary of American Commonwealths Power Corp., reports sales of gas for the first seven months of 1929 of 4,939,371,700 feet as against 4,745,983,400 feet for a like period the year previous. This is an increase of 93,390,300 feet over a year ago and reflects in part the result of the aggressive new business policies of the company in the connecting of additional domestic and industrial consumers of gas. Increased industrial activities in the cities of Minneapolis, Minn., Birmingham, Ala., and Bangor, Me., contributed to the larger portion of the increase in the sales of gas.

CARBON BLACK IMPORTS

NEW YORK, Sept. 2.—Canada imported 9,000,000 pounds of carbon black, valued at $600,000, from the United States during the first six months of 1929, according to data compiled by Canadian customs officials. Canada during 1928 imported 12,940,270 pounds of carbon black from the United States, with a total value of $853,230. In view of the present tariff situation, however, it is indicated that Canadian interests are investigating the possibility of producing carbon black from waste gas of the Alberta oil fields.

CHANGE TO NATURAL GAS INVOLVES OILING THE METERS ON PREMISES

Change-over from manufactured gas to natural gas in New Orleans, La., and Memphis, Tenn., involved many unusual tasks. Among these was the oiling of meters on consumer's premises. How this was done is described by H. C. Abell, vice president of the Electric Bond & Share Co., New York, as follows:

"Trucks were equipped with lowered platforms placed at such a height so as to facilitate the oiling of a meter from the ground. Each truck was provided with two drums of approximately 42 gallons capacity, conveniently arranged. One of these drums contained a nonvolatile oil. The other drum was used to receive the condensate of the artificial gas which was deposited in the meters. These trucks were also equipped with the necessary soldering tools, which consist of a tinner's charcoal furnace, soldering irons, solder, soldering flux and tinned rivets.

"The crew of each truck consisted of four men: two fitters, a helper and a tinner. Their duties were divided as follows: The fitters disconnected the meters and placed the address on top of each meter with a colored crayon. These two fitters worked, one on each side of the street. The duty of the helper was to carry the meters to the truck to be oiled by the tinner and carry them back to the fitters for re-installation. The tinner's duty was to punch holes in the meter, drain the artificial gas condensate therefrom and insert the necessary quantity of meter oil in the meter, then cover up the holes by soldering rivets in them.

Holes Plugged in Meter

"Two holes were plugged in the meter, each midway from the center partition and front or back of the meter one-quarter inch from the bottom. Each hole was cleansed with a redesigned small 1-inch concrete drill used in a brace to remove any possible rust or pitted parts in or around the holes. The rim and around the holes were properly tinned preparatory for soldering. The next manipulation was to insert the necessary quantity of oil into both the front and back of the meter through the holes, the same amount of oil being inserted into each hole supplying the diaphragm cases. The entire manipulation of making holes and oiling, etc., was carried out while the meter was lying on its side.

"Exceptional care was taken in properly marking the meters. The number of the premises from which they were removed was marked on top of the meter immediately after its removal. This was done for the purpose of eliminating the possible switching of meters.

"At no time during the process of oiling the meters, was the customer without gas service for a period of more than 20 minutes' duration.

"By experimentation in our meter repair shop, the quantity of oil necessary for each size meter was determined. In every instance, for any size meter, a sufficient amount of oil was allowed in the meter bottom so that the diaphragm be at least one-quarter inch submerged.

"Naturally, due to the various types and sizes of gas meters, and the fact that some meters have larger diaphragms than others of the same size, but different capacities, the quantity of oil varied accordingly. It was better to have a little more than barely enough and we were governed along these lines.

Quantity of Oil Measured

"The quantity of oil used in each partition of the various size and type of meters was emptied and measured in ounces for the purpose of obtaining the right amount to be used for each meter. Realizing the slow process of pouring the oil into the meters in ounce measures by the use of a funnel, we equalized the amount into squirt gun loads and discovered that the ordinary shop size Rose grease gun was adaptable for this use.

"The quantity of oil used was then converted into gun loads for the 5 and 10-light size meters. For the larger meters it was necessary to use a liquid measure and a funnel in order to speed up matters. Each gun holds 6 ounces of meter oil.

"The following quantities of oil were put into each meter:

	Gun load*
5 Lt. A. & B. Meters	1
10 Lt. B. Meters	1
10 Lt. A. Meters	2
20 Lt. Meters	2

*In each side of meter partition.

	Pints*
30 Lt. B Meters	2
30 Lt. A Meters	2½
60 Lt. B Meters	2½
60 Lt. A Meters	4
100 Lt. Meters	4
150 Lt. B Meters	8
150 Lt. A Meters	10
60 Lt. C Meters	12

*In each side of meter partition.

"It was not necessary to punch holes in the 30-light and larger size meters as these were already provided with one-half inch by three-eighths inch bushings and three-eighths inch plugs one-quarter of an inch from the bottom of both front and rear partitions of the meters. This was originally done to facilitate draining condensate from the meters deposited by the artificial gas.

"We found it good practice, when soldering the rivets in the smaller size meters to cover them completely rather than just circling them with solder. Experience has taught us that leakage from these rivets were practically minimized."

COLUMBIA BUYS CONTROL

BINGHAMPTON, N. Y., Sept. 2.—Columbia Gas & Electric Corp., through purchase of 45,000 shares of common stock of Binghampton Gas Works, has assumed control of the latter concern, which was a subsidiary of American Light & Traction Co. John G. Pew, vice president of Columbia, has been elected president of the Binghampton company, succeeding R. B. Brown of Chicago. Charles E. Bennett was re-elected vice president and general manager. Columbia Gas & Electric Corp., which recently acquired pipe lines of New York Transit Co., passing 6 miles north of Binghampton, plans to pipe natural gas from its plant in Olean, N. Y., to mix with artificial gas from local plant, for distribution to Binghampton company's 22,000 customers.

BOSTON GAS RATE APPROVED

The Massachusetts Department of Public Utilities, in approving the schedule of rates recently filed by the Boston Consolidated Gas Co., fixing a service charge to customers of 50 cents a month plus a net commodity charge of 10 cents per 100 cubic feet for the first 100,000 cubic feet and 8 cents for gas in excess of 100,000 cubic feet, which new rate is to become effective October 1, has issued a statement in which it says: "The service charge is designed to cover the cost of the company of maintaining its pipes from the street main into the customer's premises, together with the meter, the reading of the meter, the keeping of the accounts applicable thereto and the sending of bills to the customers for the amount due."

NEW HELIUM FIELD IS SCENE OF ACTIVE WORK

DENVER, Colo., Sept. 2.—Newspapers in Colorado and elsewhere have contained numerous references within the last two months to important discoveries of helium bearing gas in this State and these have attracted wide attention not only among the oil operators in the Rocky Mountain area but among governmental and other agencies interested in the production and operation of aircraft. While the company reported making the discoveries has given out no official statement concerning its plans, sufficient evidence of its activities has become available to give fair indication of what has taken place.

The Helium Co., Inc., of Louisville, Ky., a subsidiary of the Kentucky Oxygen-Hydrogen Co., which operates the only private helium recovery plant in the country at Dexter, Kans., and which supplies the Government with its product, has been engaged in drilling wells in Las Animas County, Colorado, near the town of Thatcher. Scout reports show that within the last two months it has drilled three or four wells located in Sections 27 and 35-29s-60. One of these wells is reported to have been completed at 987 feet with an initial flow of 1,000,000 feet of noninflammable gas. Reports to the effect that this gas was unusually rich in helium content were published in local newspapers and subsequently were given more extensive circulation.

A press dispatch from Detroit widely published read as follows:

"Officers of the Detroit Aircraft Corp., whose subsidiary concern the Aircraft Development Corp., is building the first all-metal dirigible for the United States Navy, were informed Wednesday that new deposits of helium gas had been found in Colorado which will supply sufficient lifting gas for inflation and operation of all United States airships for the next 20 years.

"Col. Turney Gratz and W R. Ofut, of the Helium company, commercial producers of the gas, authorized announcement of the discovery, Detroit Aircraft Corp. officials said. The new field is by far the richest helium deposit yet found, the Helium company officers said, the gas having a helium content of 7.07 per cent. The best previous helium content was 3.6 per cent.

"While it is impossible to determine accurately the total volume of the new field," Colonel Gratz said, "our corps of chemical research engineers estimated that the deposits will meet the demands of airship builders and operators for a minimum of 20 years."

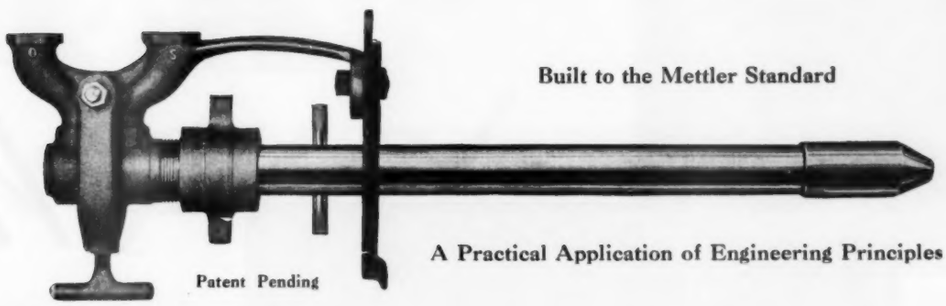
While Colonel Gratz was quoted as saying that he would not reveal the exact location at which the development work was being conducted, recent activities leave little doubt but that the Thatcher Field, usually known as the Model Dome, is the scene. A spur track from the Atchison, Topeka & Santa Fe Railroad has been laid to the site where a plant building is under construction. Twelve camp buildings for the housing of employes have been erected and machinery is now moving to the plant by rail. Local reports are to the effect that the helium is under contract to the United States Navy Department for the two immense dirigibles now under construction by the Goodyear company.

HELIUM WELL INCREASES FLOW

The No. 1 Brubacker of Trees Oil Co., a helium gas producer in Section 12-34-6, Cowley County, which started recently at the rate of 5,000,000 feet of gas daily, has increased its flow to 7,000,000 feet. The helium will be piped to the helium plant at Dexter, several miles away. The well opened a new field in Kansas.

Announcing
The METTLER

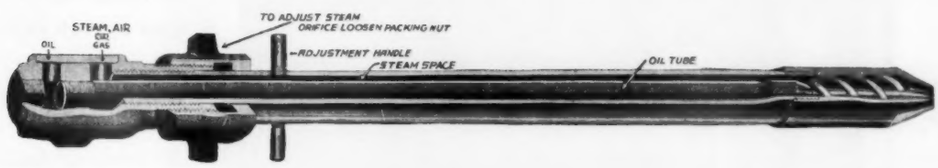
Quick Detachable Oil Burner



Built to the Mettler Standard

A Practical Application of Engineering Principles

Patent Pending



External Atomizing

The Mettler Wide Range, Quick Detachable, Steam, Air or Gas, Atomizing Oil Burner is an outstanding achievement well worthy of your serious consideration.

Detailed descriptions of superiorities have become superfluous. However, we have seen this burner operating where top of oil in gravity tank was only 4 feet above burner, steam pressure of 4 pounds at burner, two burners in use, operating 450 H. P. Boiler at 200% rating, and same burner operating successfully 80 pounds on oil, 125 pounds steam on 15 H. P. Boiler. While in operation fully adjustable, integral within itself, regardless of gravity or pressure on oil or when using steam, high or low pressure air, or gas as an atomizing agent.

Designed and constructed on absolutely correct scientific and practical engineering principles, is made of the best materials and impeccable workmanship obtainable, (bronze and brass) without a single compromise or excuse whatsoever.

Built to a standardized quantity production that allows us to quote exceptionally low prices.

It is a significant fact that the Mettler Gas or Oil Firing equipment is rarely subjected to unfavorable criticism.

Mettler Quick Detachable Oil Burners are made and sold by the manufacturer of the celebrated METTLER ENTRAINED COMBUSTION GAS BURNERS.

We Welcome an Opportunity to Serve

*Trust One Who Has Had Experience.

LEE B. METTLER CO.
406 So. Main St.
Los Angeles, Cal.

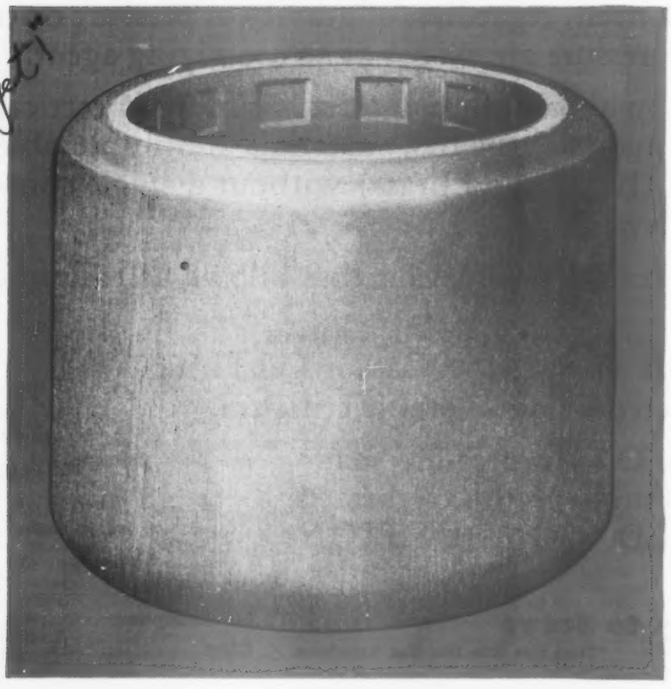
Please quote Prices on the equipment for the following:

No. of Boilers.....
H. P...... **Make**.....
No. of Stills.....
Size..... **Type**.....
Name.....
Company.....
City..... ***State***.....

Developed for oil field Bettis ..has

Crude rubber as it arrives from Sumatra, ready for inspection.

Milling is done on heavy rolls and chemicals uniformly distributed throughout.



"Best bet yet"

In order to perfect Bettis Protectors it was necessary to develop a special rubber. No other rubber would meet Bettis requirements.

A special factory was designed, erected and equipped with facilities solely for the purpose of developing the toughest and strongest rubber for oil well service.

Bettis engineers pooled their genius to make the finest rubber possible. The costliest para is used—brought from the Tropics direct to the Bettis laboratory where it is carefully inspected before acceptance.

Then it is processed scientifically. Compounds are ground in, the rubber milled, remilled, cured and tested. Each run of rubber is kept to itself during course of manufacture. Tests are made of each 25-lb. batch. Test strips are placed in an electrical testing machine which physically rends the rubber and scientifically records its inherent quality. The test rubber must withstand a breaking strain of nearly 5000 lbs. per square inch and elongation of 800%. The rub-

exclusively service ››› Rubber *no equal*

Testing Bettis rubber on electrical testing machine. Testing to 5000 lbs. and elongation of 800%.

ber must check for uniformity and homogeneous structure.

The Protectors are moulded in machines designed for the purpose, utilizing a hydraulic principle that subjects the rubber to great pressure under positive control.

There is no other rubber like Bettis. It is highly tear-resistant, retains its life and resiliency during the months of service on the pipe, does not deteriorate rapidly and will withstand more abrasion action than any other rubber known.

So when you install Bettis Protectors you not only choose the design that is correct but obtain the most suitable rubber.

And remember — close to 200,000 Bettis Protectors have been placed in service — saving the Industry hundreds of thousands of dollars potentially. The majority of all deep wells now drilling are Bettis protected.

NOW READY

New Catalog, giving many interesting facts every driller should have. Ask for a copy.

After curing, each Bettis Protector is tested for external and internal diameter.

NO SEAMS

NO HINGES

NO BALING WIRE

NO METAL ADDED

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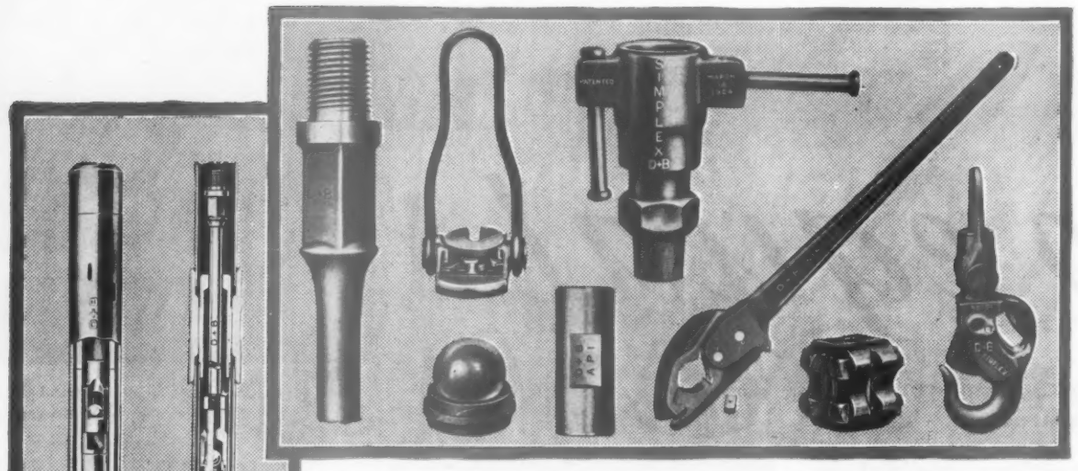
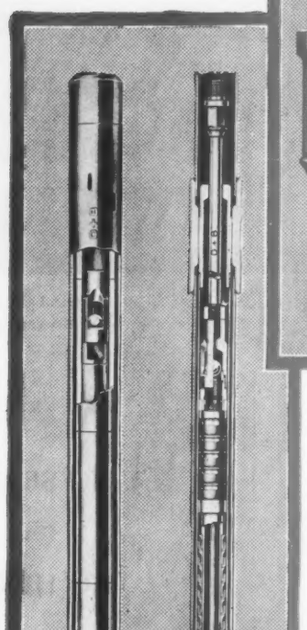
Mid-Continent Distributors—Bettis Sales Co.—616 Pub. Nat. Bk. Bldg., Houston, Tex.

Bettis Protectors

A Complete Line





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Tubing Tongs
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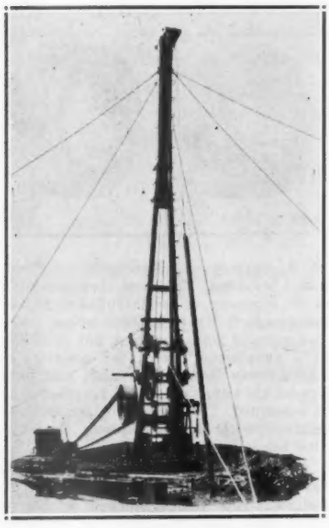
All Emsco and D+B Products (Except Derricks) Sold Exclusively in Mid-Continent Fields by The Continental Supply Company

EMSCO STEEL EQUIPPED WELLS ARE SAFE

EQUIPMENT AND SUPPLIES

STAR K IS NEW LEASE MAINTENANCE MACHINE

In the new Type K the Star Drilling Machine Co., Akron, Ohio, offers a complete lease maintenance machine for 2,000-foot work, built into a mast of 30,000-pound capacity. All working parts



are of rugged construction, yet the complete machine weighs only 8,800 pounds.

The Type K machine is recommended for cleaning out, pulling rods and tubing, drilling wells deeper, pulling casing, etc. It can be used for new drilling up to 800 feet of 6-inch hole. It is adaptable to lease jobs.

A two-wheel truck supports the weight of the machine in moving and, with the lines on the reels, the weight is nearly equal on both sides of the axle. Thus it can be moved by truck or tractor as a trailer. If a truck is available for moving, a skid type power unit can be used for drilling, and moved on the truck. When a tractor is used for power, it also serves for moving the machine. A 15-30 tractor, or any power unit of similar capacity, is recommended for the Type K machine. Either truck or tractor will raise the machine into position at the well, as the principal weight is at the bottom of the mast and the axle acts as a fulcrum.

In drilling the Type K machine is strictly a wire line spudder. In both spudding and pulling work the lines remain strung up in the same way. For cleaning out work machine is regularly equipped with wood pitmans. Spring type shock-absorbing pitmans are furnished, at an extra cost, on machines to be used for new drilling. The spring pitmans which absorb the shock in spudding also give a spring action when coming against the load in pulling. The spudder is driven by cut steel gears.

The bull reel drum or winch is chain and clutch driven, powerful and sensitive to control. Iron brake drum with steel band insures ample brake capacity. An instant type chain and friction reverse is offered at an extra cost for reversing line. Shaft boxes are adjustable for chain tension. The drum capacity is sufficient for 2,000 feet depth using three-quarter-inch wire line.

The sand reel is fast, powerful and easy to control. The brake drum is of iron with steel band. The drive is from special 6-inch face fiber pulley. All controls are within easy reach of the driller. All parts are readily accessible for adjustment or repair.

TEXAS CREOSOTING CO. FORMS NEW DEPARTMENT

The Texas Creosoting Co., Orange, Tex., has formed a department of petroleum headed by E. R. Ames, petroleum engineer and formerly Mid-Continent and Gulf Coast manager for the Elliott Core Drilling Co. The new department is designed to aid in the solution of the various problems facing petroleum executives, engineers and superintendents pertaining to the use of creosoted timber, for which the Texas Creosoting Co.'s "Black Beauty" products are designed.

The company announces that the department will be available at all times for consultation regarding creosoted timber. Inquiries will receive the personal attention of Mr. Ames.

TRADE LITERATURE RECEIVED

The Alco Oil Tool Co., Inc., Compton, Calif., has prepared a catalog of 52 pages describing its drilling bits and reamers, coring equipment, rotary drill-pipe float valve, releasing rotary spear, rotary table guard and automatic weight control, high-pressure oil-well controls and fittings, pistons and packing sets, Kammerdiner rotary jaws, Tru-lay and Crescent wire lines.

The Sharples Super Centrifuge oil purifiers are discussed in a leaflet released by the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.

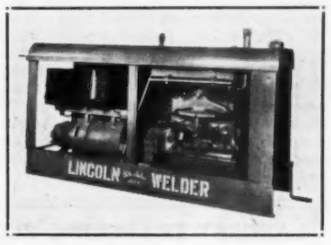
The current number of the Erie Meter Dial, published by the Erie Meter Systems, Inc., Erie, Pa., contains a description of the organization's new home by its president, L. O. Carlson.

OIL LEADS IN USE OF PLANES

The Ryan Aircraft Corp., Anglum, Mo., has found after making a survey that oil companies own far more planes than any other industry. Many operate fleets of two to six planes. Eleven oil companies now are operating the Ryan brougham.

WELDER DRIVEN BY GAS ENGINE IS INTRODUCED

The Lincoln Electric Co., Cleveland, Ohio, has introduced a new model gas engine driven welder for use where electric power is not available. The new



model is of 200 amperes N.E.M.A. rating and is powered by a 4-cylinder Waukesha engine, operating at 1,500 revolutions per minute.

An automatic idling device reduces the speed of the gas engine when welding operations cease and accelerates the engine to proper speed as soon as welding is started. It is estimated that this automatic idling device will reduce fuel consumption approximately 25 per cent as well as reducing wear in the welder.

Another feature is the protection afforded the machinery by the welded steel canopy which totally encloses the outfit. Unified control, a feature of all new improved "Stable-Arc" welders, is incorporated in this new model. Operating controls are enclosed in a ventilated steel cabinet.

SOVIETS BUY MORE ENGINES

Receipt of an order from the Soviet government for 1,700 heavy-duty Hercules engines of the six-cylinder type has been announced by the Hercules Motors Corp. of Canton, Ohio. This order, which represents an expenditure of over three-quarters of a million dollars, is the second placed with Hercules within the year through the Amtorg Trading Corp., authorized agents for the Soviet government in America.

ALUMINUM IS EMPLOYED IN MAKING VENTILATOR

The application of aluminum to the manufacture of Burt ventilators is the result of years of research and development by engineers of the Burt Manufacturing Co., Akron, Ohio. Aluminum is a corrosion-resisting metal that can be used in direct contact with fumes of ammonia, sulphuric acid, acetic acid, nitric acid formaldehyde, tannic acid, sulphur, organic acids and other corrosive gases.

The tensile strength and lightness of aluminum permit the construction of ventilators which are strong and rigid with a marked reduction in weight. This reduction in weight makes it possible for fewer men to take care of the erection and appreciably lowers the cost of the installed equipment. It also relieves the roof of weight which often reaches a figure where reinforcements are necessary to support the larger sized ventilators.

Even in ordinary service ventilators often encounter fumes or gases which bring about corrosion and ultimately reduce the efficiency of the ventilator to a point where repairs or replacements are needed. Sometimes it is necessary to suspend operations until the ventilating equipment functions properly. Ventilators made of aluminum are resistant to most of the fumes ordinarily occurring in industrial processes. Several types of aluminum ventilators are made by the Burt company.

NEW METER LITERATURE

A new 6-by-9 book, containing 104 pages, about 100 illustrations and numerous tables, has just been published by Metric Metal Works of the American Meter Co., Erie, Pa., for use in the operation of Westcott orifice meters for gas, air, steam, oil or water. This book has been designated as Bulletin E-2 and is distinct from the new catalogue EG-2 on Westcott orifice meters, which has also been made available to present and prospective users of this type of meter. Other new publications of the same company are: Metric Rate-Volume Controller Bulletin E-5, describing the method of installation of rate-volume controllers for automatically controlling the rate of flow of air, gas, oil, steam, water and other liquids; Bulletin E-3, Metric Indicating Flowmeters, for gas, air, steam, oil and water; Laboratory Bulletin E-1, containing complete description of American Meter Co.'s laboratory at Metric Metal Works, Erie, Pa., with detailed discussion of preparation of equipment and procedure during test.

UTICA BRANCH IS MOVED

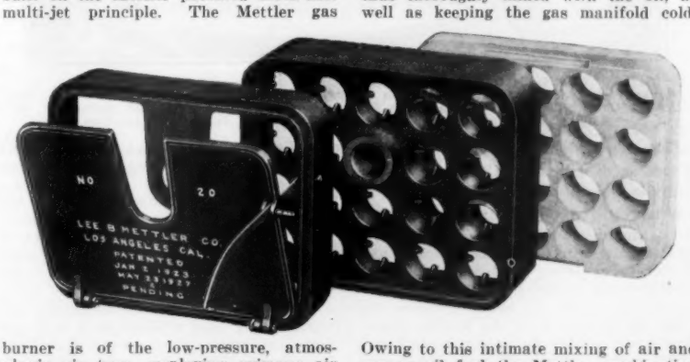
The Utica office and plant of the American LaFrance and Foamite Corp., manufacturers of fire extinguishing equipment, is being moved to the company's main plant and general offices in Elmira, N. Y. Prior to the centralization of the two plants and offices, the Utica branch had manufactured all the industrial fire extinguishing devices marketed by the concern, with the Elmira plant devoted to the manufacture of motor fire apparatus, ladders and equipment for municipal fire departments.

WELDER MOUNTED ON TRACTOR

The new Lincoln stable arc welder mounted on the McCormick-Deering tractor is announced by the Pontiac Tractor Co. of Pontiac, Mich. This unit is furnished in either the 200 or 300 ampere machine and gives a wide range of utility.

METTLER HAS NEW COMBINATION OIL AND GAS BURNER

In addition to its entrained combustion gas burners, the Lee B. Mettler Co. of Los Angeles, Calif., is now manufacturing a combination gas and oil burner built on the Mettler patented multi-unit multi-jet principle. The Mettler gas



burner is of the low-pressure, atmospheric air type, employing primary air only for combustion.

The Mettler Co. with the gas burner used in this combination says it has solved the problem of obtaining a thorough mixing of low-pressure gas and air. The new unit is so arranged that it can be equipped with any standard make of oil burner, whether of the steam, air, gas or mechanical atomizing type.

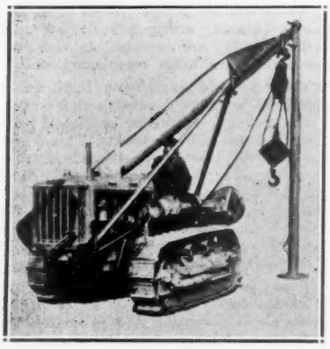
When the unit is operating on oil the combustion air is drawn in through the many air openings in the gas burner and thus thoroughly mixed with the oil, as well as keeping the gas manifold cold.

Owing to this intimate mixing of air and gas or oil fuel the Mettler combination unit is said to operate with a minimum of excess air, which produces the non-oxidizing flame desired to prevent damage to furnace refractories and heating surfaces. The oil burner can be easily removed without disturbing steam, oil or gas connections.

EQUIPMENT AND SUPPLIES

MAKES SIDE WINCH AND BOOM FOR CATERPILLAR

Designed for moving and loading heavy pipe and machinery in railroad yards, sidings, oil fields and elsewhere, the side winch and boom developed by the All-steel Products Manufacturing Co., Inc.,



of Wichita, Kans., for use with the "Caterpillar" Thirty Hillside Special, is believed to fill a need. This equipment is easily mounted, it being necessary to drill only four holes in the drawbar plates of the tractor.

The approximate weight of the side winch is 1,200 pounds. The speed transmission gives three speeds forward, one speed reverse.

Capacity pounds pull and single line speeds: Low, 92 feet per minute, 12,450 pounds pull; second, 185 feet per minute, 6,200 pounds pull; high, 370 feet per minute, 3,000 pounds pull; reverse, 95 feet per minute, 12,150 pounds pull.

The drum capacity is 250 feet of one-half inch line. The winch clutch is positive pin type, with automatically lubricated shifter fork.

The weight of the boom, equipped, is approximately 3,500 pounds, including counterweights; length over all, 15 feet. The maximum height of the boom when mounted is 11 feet. The boom will raise and carry 4,000 pounds with counterweights and without stiff leg. Lifting capacity with stiff leg used at outer end of boom, 40,000 pounds.

BUSINESS NOTES

Effective October 1, the 14 wholesale distributing corporations owned by the General Electric Co. will be consolidated into the General Electric Supply Corp. of Delaware. These companies for years have distributed General Electric products and the plan involves no change of ownership.

William S. Waldrip, chief engineer of Neilan, Schumacher & Co., Los Angeles, Calif., manufacturers of regulating devices and control equipment, is in Chicago. J. M. Coffeen accompanied Mr. Waldrip from the factory and will be the sales representative of the company in Chicago. After leaving Chicago, Mr. Waldrip will go on to New York City and establish a Neilan-Schumacher sales representative there.

Production of the Quincy, Ill., and Denver, Colo., plants of the Gardner-Denver, Co. is being increased to take care of unfilled orders, according to Ralph G. Gardner, vice president. Part of this additional output is being effected through the employment of a night force in the Quincy plant. The company manufactures slush pumps, air compressors, high-pressure drill steel forges, rock drills and drill steel sharpeners.

MANAGING DIVISION OFFICE

Robert L. Kilker, sales engineer of the Pyle-National Co., Chicago, is now in charge of the division office opened at 327 Exchange National Bank Building, Tulsa. Mr. Kilker's office will be in charge of sales for Oklahoma, Kansas, Texas, Louisiana and New Mexico. Alex Johnson, 1000 Marine Bank Bldg., Houston, Tex., is the field representative of the company. The company specializes in lighting problems for the oil industry. All phases of production, refinery and natural gasoline plant operation are included in the lighting service. A complete line of vapor proof fixtures and conduit fittings is offered for refinery and gasoline plant operation.

"INCOR" IN OIL INDUSTRY

The economies obtained with "Incor" brand perfected high-early-strength Portland cement embrace practically every phase of the oil industry from well to filling station. In some of the largest oil fields, "Incor" is now used for difficult oil-well cementing jobs, for bottom-hole work, for cementing back, for plugging nonproducing holes, for filling crevasses, and for the construction of derrick corners, foundation beds, etc. "Incor" cement, according to the manufacturer, contains no admixtures, requires no special methods of handling; mixes readily without lumping and produces dependable Portland cement concrete that is ready to use in 24 hours.

LARGEST TRAVELING BLOCK FOR OIL FIELD SERVICE

Regan 76-inch traveling block used on Dabney-Johnson Murchison well No. 1 at Long Beach, Calif. The crew, reading from left to right: F. E. Davison, tool pusher; W. E. Saudar, H. C. Jones, Jack May and A. E. Norton. Seated: Ed Davison.

The latest development by the Regan Forge & Engineering Co. is a 76-inch traveling block which is declared to be the largest ever built for oil-field service. It is manufactured with four or five sheaves, as desired, and incorporates new features, including an improved guard arrangement whereby no projecting bolt heads, pin ends or sharp corners can come in contact with the fourble board. The finger guards are of especially heavy construction. A special extra heavy-duty clevis is provided. The straps are of heavy construction and the entire block is braced rigidly to prevent distortion, according to Regan engineers.

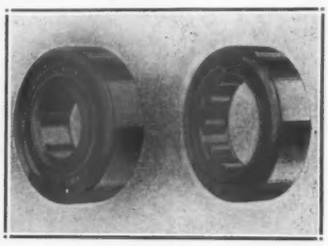
An improved Alemite system of lubricating the block is embodied. The block has been in service in Southern California fields, where it has been subjected to many tests, according to Bert Cleveland, sales director.

The extra deep drilling calling for the running in and pulling out of unusually heavy loads and the fact that a block must operate at high speed even when running light, were taken into consideration when designing the block.

The block is of greater weight so that without any load whatsoever it will permit easy reeling and prevent the wire lines from slapping back and forth. Each of the sheaves has a dual antifriction bearing and the pin of each sheave is integral with its sheave. The large sheaves are assembled in a compact manner by staggering them. Certain parts of the block embody heat-treated steel of special analysis.

HYATT COMPANY OFFERS NEW TYPE OF BEARING

To satisfy an increasing demand for a roller bearing interchangeable with standard S.A.E. single-row ball bearings, but having greater load capacity, the Hyatt Roller Bearing Co. of Newark,



N. J., is now manufacturing single-row radial bearings. This new line, according to the company, is not intended to replace the standard Hyatt roller bearing, which uses spirally wound rollers, but is offered as a supplement to it, for positions in which space limitations exist, and loads beyond the capacity of ball bearings must be sustained. The rollers are permanently retained with the outer race, the inner race being separable.

A separator, floating on the rollers, spaces them properly, and heat-treated end rings retain them endwise within the outer race. The end rings and separator function to keep the rollers in proper alignment and to insure positive contact along their full length. This full line contact of the rollers, the company says, enables its single-row radial bearings to sustain greater loads than can be carried safely by ball bearings of equivalent sizes which have only spot or point contact between balls and races.

The rollers and races of this bearing are made of a special analysis chrome nickel alloy steel, and the end rings are of vanadium steel to eliminate any wear by the ends of the rollers. The roller separator is so made that the pockets are parallel and equally spaced, thus assuring uniform load distribution on the rollors.

The bore, outside diameter and width of Hyatt single-row radial bearings correspond to standard S.A.E. metric dimensions. They, therefore, are interchangeable with all single-row ball bearings of equivalent size, providing greater load capacity within the same space and increasing the efficient life of the installation.

It is further stated that the possible separation of this bearing into two parts, the inner race being removable, offers opportunities of developing more economical methods of assembling for all applications with or without the inner race. The roller ends are sufficiently rounded to facilitate assembly where the inner race is not used and both the outer and inner races are chamfered at one end.

Hyatt engineers says that a roller of a length greater than its diameter has great load capacity for the reason that it provides line instead of spot or point contact and wider distribution of the load, thereby preventing bearing fatigue or fractures due to overloading.

DRILLING LINE MAKES RECORD

A 1½-inch Yellow Strand rotary drilling line (1,100 feet of it) belonging to J. C. O'Mara, drilling contractor, has drilled 7,000 feet of hole with 6-inch drill pipe weighing 25 pounds to the foot, and has set 4,000 feet of casing. This record was made at the Prairie Oil & Gas Co.'s No. 9 Billington at Seminole, Okla.

Franklin Valveless Oil and Gas Engines

Some of the Franklin OF Good Points

- Enclosed type
- Low fuel consumption
- 100% interchangeability
- Simplicity
- Piston rod is fitted with metallic packing which never needs adjusting or replacing
- Every spring exposed
- Complete simplicity with practically no adjustment
- In case of belt breakage engine automatically stops
- Fuel pump driven by eccentric running in oil bath
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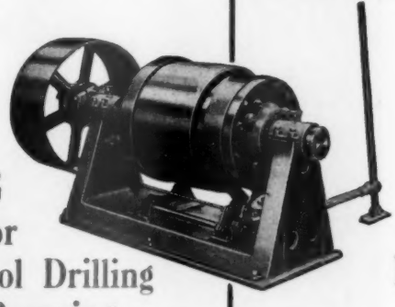
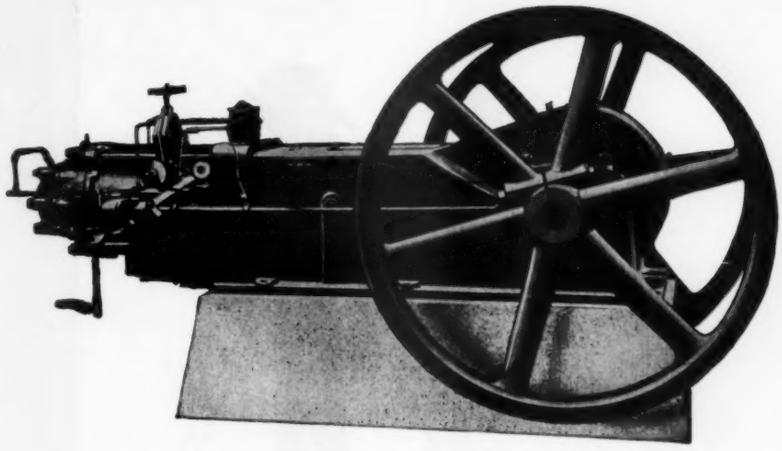
- Only standard threads used. No special wrenches required
- Cylinder has 3 point, force feed lubrication
- Balance of lubrication is splash feed
- Pistons are air cooled
- All nuts subject to vibration are castillated and fastened with cotter pins
- Most economical to operate in fuel, lubricant, water and repairs
- Easy to start



Type BG Clutch for Cable Tool Drilling or Pumping

- A vast improvement over the former type of clutches.
- Driven from pulley on engine. Permits the use of a larger diameter pulley and makes possible a slower clutch speed. Operates by hand lever on derrick.
- Construction and design prevent Reverse Clutch Troubles.

PRICE—$1200.00 F.O.B. Franklin, Penna.



New FRANKLIN OF Driller
The Engine With the Pedigree

Back of the new Type OF Franklin Valveless Engine are years of development work—and engines which in their time stood unsurpassed.

But—new times—new conditions. So here is the Type OF—an engine in its proper size, capable of going as deep into the ground as you need to go—at a smooth, swift pace and economically.

Whether your wells are located in proven fields or in isolated sections, you cannot beat the Franklin records of low operating costs — in fuel, lubricating oil or water. Both drilling and pumping sizes mount on the same block with corresponding bolt holes. Portable, light, powerful and easily serviced. What more could you ask?

Send for literature.

Franklin Valveless Engine Company
Franklin, Penna.

PRICES

40 H.P. Type OF Franklin, including water circulating pump and pulley. *$1550 F.O.B. Franklin*

50 H.P. Type OF Franklin, including water circulating pump and pulley. *$2050 F.O.B. Franklin*

80 H.P. Type OF Franklin, including water circulating pump, pulley and air starting equipment. *$3200 F.O.B. Franklin*

NOTE—Type OF is readily converted into type OG for gas fuelization.

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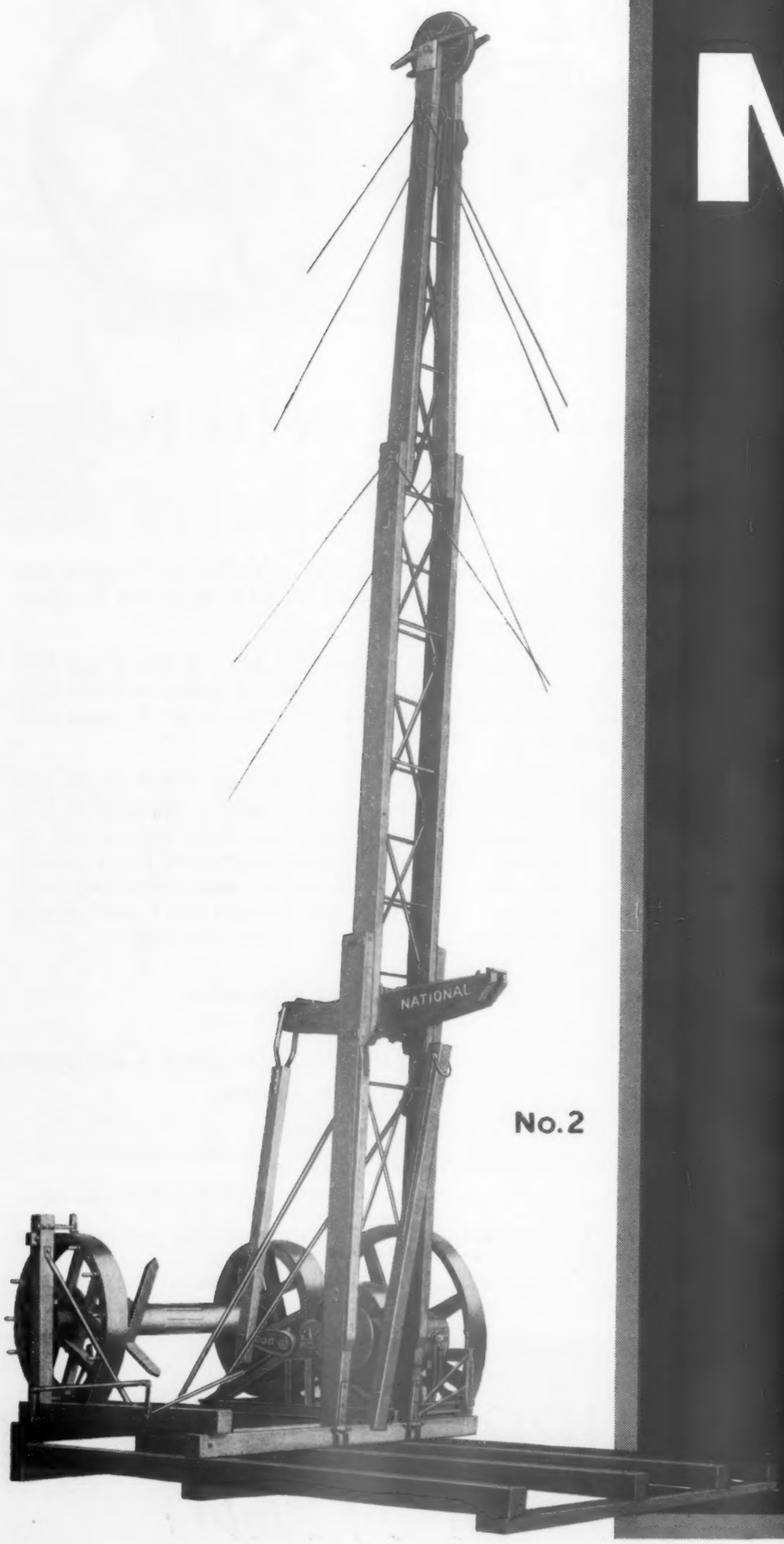

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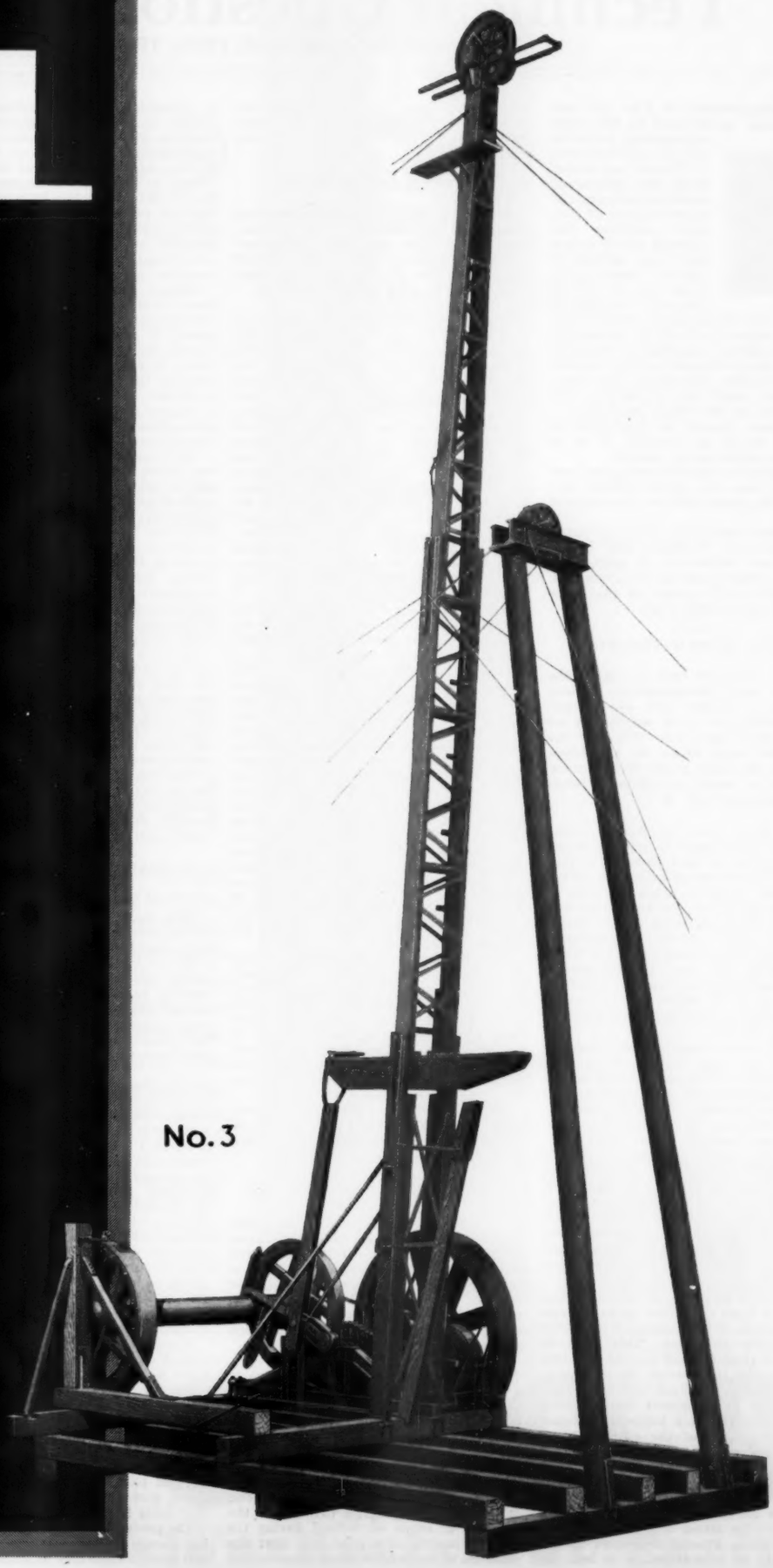

No. 3

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

BOILER WATER TREATING

As you know, we have a small refinery with three 250-horsepower boilers. The water is treated with ——— compound, which gives good results, but we have to blow down too often and too much hard scale forms in the tubes. Would we get better results from a treating plant or could you advise a better boiler compound?—F. A.

There are a large number of steam plants where a properly selected boiler compound may be used to an advantage for the purpose of softening the boiler-feed water; however, when anything is added to the water the conditions and quantities used should be closely supervised. A water supply is constantly changing in composition so that a treatment suitable for one day will seldom suit the conditions existing on the following day. It is the better practice whenever possible to treat the water before it enters the boiler.

Another boiler compound will probably give you the same trouble, because in many instances frequent blowing off of the accumulated mud is required and to reduce the foaming. The soft mud and the concentration of the alkaline salts both cause foaming. The boiler compounds are usually mixtures containing large quantities of sodium salts, such as the carbonate, silicate, and phosphate, together with some caustic soda. Some compounds contain other substances, in addition: starch, tannin, chromates, iron compounds, oil, kerosene, mercury and numerous organic materials have been recognized.

The waters in your section are known to contain large quantities of scale-forming chemicals of the permanent hardness class, chiefly sulphates. This scale is heavy and close grained so that frequent shutdowns for its removal are necessary. Heat treatment combined with the use of proper salts is considered the best way to adjust such waters before they enter the boiler. Many of the compounds of calcium and magnesium may be reduced in water by the formation of insoluble compounds, generally by the addition of lime and soda ash. At the same time the sulphates are changed to insoluble carbonates by the action of the soda ash.

While these general principles should be of help as suggestions, it is best, as pointed out above, that all control should be based on tests and analyses made with such frequency as the local conditions require.

PATENT APPLICATION

I have made a trap for separating liquids and gas which has been operating 100 per cent for over three years and would like to get a patent on it. Will you tell me how to go about it and what does it cost to get a patent?—A. J. W.

It would seem from your statement that you cannot obtain a patent on this device because it has been in use for over two years. The regulations of the Patent Office require that an invention must not have been available to the public, in use, or on sale in the United States more than two years before the application for a patent is filed. The reason for this statutory rule is to prevent an inventor from extending the monopoly time, the 17 years granted by a patent, by having the invention in use but to delay filing a patent application until some other person starts to use the same idea. The term covered by U. S. Patents begins with the date of its issue; however, protection may be established from the filing date.

Any person may file an application for a patent provided all of the rules of the Patent Office are observed and the material is presented in proper form. As a patent specification and set of claims should have the invention fully described and the exact limits set forth, aside from the knowledge required to determine novelty, the possible need for interference hearings, and many other considerations, the expert advice and the special experience of a reliable patent attorney are essential for best results. One of the rules of the Patent Office reads: "An applicant or an assignee of the entire interest may prosecute his own case, but he is advised, unless familiar with such matters to employ a competent patent attorney, as the value of patents depends largely upon the skillful preparation of the specification and claims. The office cannot aid in the selection of an attorney."

An application includes—A petition signed by the inventor with his full name; a specification, signed by the inventor; an oath administered under legal conditions; a drawing, made to comply with rules of the Patent Office; payment of the filing fee of $20 plus $1 for each claim in excess of 20. The final fee is also $20 plus $1 for each claim allowed in excess of 20.

The minimum cost, including attorney fees, for obtaining a U. S. Patent is approximately $75 and the limit may run into a very great sum.

STORING NATURAL GASOLINE

Would you kindly advise concerning the feasibility of storing casinghead gasoline of approximately 84 gravity in the ordinary 50,000-bbl. storage tank? Do you consider it too dangerous and do you consider it a wasteful idea in so far as evaporation from thief holes is concerned? Can you recall any companies using such storage for gasoline?—G. B. M.

The satisfactory storage of gasoline is a problem of major importance to the petroleum industry, because of the direct influence on the supply and consequently the market price. In the past the refiner has not deemed it advisable to risk the possible loss through evaporation that might occur when the gasoline had to be held in storage for a number of months. It has been the practice to increase the quantity of crude oil refined during the warmer months of the year to meet the demands of the market when consumption is greatest. It is not difficult for the refiner to adjust his production in this manner. However, the production of natural gasoline cannot be so easily controlled, for the output of natural gas cannot be increased or decreased to suit the volume of gasoline to be made. The lack of proper storage results in bad fluctuations of the market price for natural gasoline, so this storage problem is of exceptional importance in the natural gasoline business.

Storage losses of gasoline usually increase with the gravity, or volatility, of the product. Extra precautions are necessary if this loss is to be kept low enough to avoid an unprofitable condition. A good roof is essential and experience indicates that the steel roof is preferred. There can be no free passage of vapors and of course the tanks must be absolutely tight and be painted a light color to reduce absorbed temperatures.

The largest losses are due to breathing and filling. The contraction and expansion of the vapors during the cooler and warmer parts of the day, because of atmospheric variations, are described as breathing. During this process large quantities of heavy vapors, representing so much liquid, escape into the atmosphere. Some means should be provided to conserve these vapors. An auxiliary tank connected with a gas supply should enable one to regulate this. In addition, there should be suitable relief valves.

There is no danger from explosion if air is excluded from storage tanks. After the tank has been made tight, including the thief holes, and provision made for regulating expansion, all air should be excluded by passing gas through the tank and when all air has been displaced, the gasoline may be started into the tank.

The idea appears entirely feasible and not especially dangerous. A number of companies are reported to be using such storage; they are located in the Mid-Continent district and in California.

CRACKING PLANTS AND CAPACITIES

How many refineries are there in the United States and how many of these have cracking plants? Can you furnish a list of the different kinds of cracking plants that are considered to be of commercial importance and the yields obtained? I would like to know also the total capacity of the cracking plants and the total quantity of oil refined per year?—L. C. M.

According to the Survey of Refineries of the United States, as published in The Oil and Gas Journal, March 7, 1929, there were at that time 463 refineries, of which 341 were operating, with a daily total capacity of 3,719,550 bbls. of crude oil, and an operating capacity of 3,453,250 bbls. There were 170 plants of the 341 which had cracking plants; the total cracking capacity of which was reported to be 1,487,950 bbls. a day. This survey lists the refineries by name and groups them by states and you will find the type of the cracking units given together with the capacities of each plant. The yields of each type of cracking unit are not available.

A similar survey has been made by the United States Bureau of Mines, circular 6,127 by G. R. Hopkins. This authority reports a total of 2,205 cracking units with a total daily capacity of 1,476,874 bbls. Of the total capacity for the completed plants and those under construction, 1,194,501 bbls., or 81 per cent, represent the capacity of the operating units, 147,923 bbls., or 10 per cent, was shut down, and 134,450 bbls., or 9 per cent, was being built.

The production of gasoline by the cracking process in 1928 amounted to 122,381,000 bbls., an increase of 21 per cent over 1927. Although the output of gasoline by straightrun methods and by the use of natural gasoline increased materially in 1928, the relative proportion of cracked gasoline to the total gasoline output rose from 30.7 per cent in 1927 to 32.4 per cent in 1928. The month of highest indicated cracking activity was November, when the proportion of cracked gasoline produced to the total was 34.3 per cent.

Thirty-six different types of cracking processes are listed in this survey, as compared with 31 in the survey of January 1, 1928. Since the majority of the types are used at only one refinery, there are only a comparatively few processes now being actively licensed. These are the Cross, Dubbs, Holmes-Manley, Jenkins and Tube and Tank processes. All of these five types made gains in total charging capacity during 1928, and on January 1, 1929, had a combined capacity, both built and under way, of 948,121 bbls., equal to 64 per cent of the total.

STANDARDS FOR VOLUMES OF LIQUIDS

What is the meaning of primary methods for measuring the volume of water or any liquid? How are the units for measuring power water derived? Will you kindly give me the standard weight of a cubic foot of water, with reference to the authority?—A. S. C.

Primary methods for measuring the quantity of water, or any other liquid, are those in which the volume is determined by actual measurement of the volume or the quantity is weighed. Secondary methods involve the use of some measuring device, such as the weir or some form of meter.

According to the Power Test Code of the American Society of Mechanical Engineers, as adopted by the Hydraulic Society, the weight of a cubic foot of water at 39.1 degrees Fahrenheit is 62.43 pounds. The related units have been defined by these authorities as in the following:

The standard unit for volume shall be the U. S. gallon or cubic foot. The gallon unit shall be expressed in gallons per minute or million gallons per day of 24 hours. The cubic foot shall be expressed in cubic feet per second. The standard U. S. gallon contains 231 cubic inches.

For temperatures not exceeding 85 degrees Fahrenheit the specific gravity of water may be taken as unity. In the computations, the following relations shall be used: The volume of 7.4805 gallons is equivalent to 1 cubic foot, and 448.83 gallons per minute is equal to 1 cubic foot a second. Also, 694.45 gallons per minute is equal to 1,000,000 gallons per day of 24 hours.

The unit for measuring head shall be the foot. The relation between a pressure expressed in pounds per square inch and that expressed in feet of head is 1 pound per square inch = 144 ÷ weight of a cubic foot of liquid. For water and when the specific gravity is unity, 1 pound per square inch equals 2.307 feet.

In reading gauges calibrated in pounds per square inch, when other than water is handled, or when the temperature of the water is such that the weight per cubic foot is greater or less than 62.43 pounds, it is necessary to divide the reading in pounds per square inch by the specific gravity and to multiply by 2.307. This example is given: 100 lb./sq. in. pressure on brine of 1.25 gravity in equivalent to 185-foot head; the same pressure on oil of 0.85 specific gravity is equivalent to 272-foot head; and a like pressure of 100 lb./sq. in. on water of 210 degrees Fahrenheit having 0.96 specific gravity is equivalent to 240-foot head.

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THE super ability of Blackor to resist abrasion longer than any known hard-facing material and as long as, if not longer, than any hard metal insert, means greatly increased life to tools and more hole at less cost. Actual tests in the field and laboratory...made to prove Blackor's value in drilling operations...show that Blackor will frequently outlast hard-facing metals ten times. Blackor eliminates the necessity of hard inserts, too, because it is as hard as any metal insert. You can subject Blackor to any test and it will prove its extreme resistance to abrasion.

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ORDINARY FACINGS

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The Super Abrasion-Resistant Facing

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

FUNCTION OF ROTARY MUD

I am not wholly clear as to what functions are performed by the mud used in rotary drilling. I understand, of course, that it brings the cuttings up out of the hole, and that I understand to be the principal purpose of the mud. But the statement is made that it penetrates sands containing gas or water and forms a plaster over the face of the sand, in that way preventing entrance of the gas or water. But won't this plaster which shuts off gas and water sands shut off an oil sand in the same way? And might it not be possible that the driller would pass a showing of oil without knowing anything about it? Then, too, it seems to me that this mud, especially if very heavy, as it is supposed to be, could not penetrate a sand far enough to be very effective in shutting off any strong flow of either gas or water.

I wish you would clear up these points for me and also tell me if there are other purposes in using mud. Also is there any sort of standard to follow regarding the thickness of the mud.—R. Y. T.

The penetrative power of rotary mud is dependent upon the character of the formation drilled. In some strata the penetration is negligible. In others of extreme porosity so large an amount of the mud fluid is drawn from the hole that for a time the mud ceases to serve as a circulating medium at all.

It is a fact, as you suggest, that the plastering effect of rotary mud may seal off an oil sand of low pressure as well as gas and water sands, and it is quite possible for the driller to pass small showing of oil or gas without knowing of their presence. For this reason cable tools are favored for drilling in wildcat territory, as they enable the driller better to ascertain the character of the formations through which he is boring.

Although there is no fixed standard governing the weight, or viscosity, of rotary mud, it has been found that a mud weighing about 10 pounds a gallon usually works satisfactorily.

In reply to your other questions the following is quoted from a paper on "Rotary Drilling Problems," by R. S. Cartwright, of the L. W. Prunty Drilling Co., Ponca City, Okla., presented before a meeting of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers:

"The primary purposes of mud-laden fluid, or mud as it is commonly termed, in its application to rotary drilling, are, first, to carry the cuttings from the hole, permitting them to settle out in the circulating pits, and, second, to wall up the hole, once it is drilled, and seal off minor oil, gas or water sands. It serves a further incidental purpose in acting as a cooling medium on the cutting tool, and to a limited extent as a lubricant in the hole. To accomplish these ends effectively it must be of approximately the correct density and viscosity, and must have the property of penetrating sands encountered. It must also permit of easy circulation by the slush pumps.

"The average rotary operator does not give much serious consideration to the condition of his mud. Generally it is either good or bad according to the individual driller's opinion and experience. Differences of as much as 3 pounds per gallon in mud in use on wells drilling in the same field, under practically identical conditions, have been observed. On one well a difference of as much as 1½ pounds per gallon during a single period of 12 hours has been checked. It is not illogical to assume that certain standards could be worked out for the usual drilling conditions, and that greater drilling efficiency would result if the correct type of mud were maintained, rather than depending on the hit-or-miss methods sometimes followed.

"Mud is a collodial suspension of finely divided clay in water, the clay being derived from the formations encountered in the hole and the mixture resulting from the cutting and churning action of the cutting tool with water flowing at high velocity from the slush pumps. When drilling in a clay bearing formation there is a tendency to 'make' mud—to form a heavier colloid—while in other formations, particularly sand, there is the opposite tendency, that is, for the mud to thin. Normally, there is an excess of mud-forming material drilled, such excess clay settling out in the circulating system, and making it possible, by mixing or thinning with water, to maintain a fluid of fairly identical characteristics."

ELASTICITY OF METALS

Will you please give me an explanation of the term "elasticity" as used in connection with metals?—H. F. J.

Usually this term is used in connection with steel, but it is also applied to other metals that are required to withstand loading stresses and strains, and the definition of "elasticity" is perhaps as well given in the American Institute of Steel Construction handbook as elsewhere:

"Structural steel is perfectly elastic below the stress per square inch which is called the yield point, and beyond this yield point there will be a permanent set of deformation when the load is removed. Just below the yield point, and usually within 1,000 pounds per square inch of it is the elastic limit, below which the elongation or deformation is always exactly proportional to the stress per square inch.

"The ratio of elongation to the stress per square inch is called the coefficient of elasticity, the modulus of elasticity, or sometimes Young's modulus. It may be otherwise defined as that stress per square inch which in tension would double the length of a test specimen, assuming that uniform elasticity were possible throughout the experiment.

"For structural grades of steel, the coefficient of elasticity is 29,000,000 pounds; that is, a bar 1 square inch in area will stretch one twenty-nine millionth (1/29,000,000) of an inch for each inch of length and for each pound of stress.

"It has been found by innumerable experiments that the physical properties of steel cannot be changed regardless of the number of times a load may be applied to it so long as the stresses produced do not exceed the elastic limit.

"It has also been found that when steel is loaded to produce stresses beyond its yield point, and therefore producing permanent set, the material will have a higher elastic limit and yield point if the original stresses are removed. It is this principal that is used in the manufacture of cold-rolled and cold-drawn steel."

WHY WAS IT CALLED THAT?

JARS

This term is descriptive of the action of a piece of equipment used in a string of cable tools to transmit motion to the bit at the end of the string. The special function of the jars is to permit the driller by "feel" to determine closely the changes in formation being drilled. In many fishing jobs the jars are essential to give an upward jerking motion to the piece of apparatus lost in the hole.

LEASES AND ROYALTIES

If you will, please, kindly give me the names of some texts, and if possible the publishers, covering the subject of oil and gas leases and royalties in general, so that a student may become familiar with their sale and purchase under the varying conditions by which they are offered to investors. No doubt some of this literature may be had from libraries, if I knew the titles for which to ask.—G. N.

It is possible for you to obtain literature on oil and gas leases and royalties that will be of material help in acquiring a working knowledge of these subjects, but such literature should not be expected to make anybody "familiar with their sale and purchase under varying conditions." As in most other fields, books can provide a foundation only. Familiarity with the subject must come from actual experiment and practice. It is suggested that you obtain from the United States Bureau of Mines, Washington, D. C., its bulletin No. 206 and from the United States Geological Survey, Washington, D. C., its bulletin No. 623. Both of these deal with the subject of leasing. If you will address an inquiry to H. Foster Bain, editor and secretary of the American Institute of Mining and Metallurgical Engineers, 239 West Thirty-ninth Street, New York, you will receive information concerning further literature on the subject. A work on leasing can be obtained also from the bookstore of the University, Norman, Okla.

The literature on royalties is not extensive. An interesting book, "Oil Royalties," by Edwin I. Reeser, may be obtained at bookstores or from the Dexter Publishing Co., Tulsa. Computation of government royalties is treated in Bulletin No. 232, "Manual for Oil and Gas Operations," published by the United States Bureau of Mines.

EARLY GEOPHYSICAL WORK

Can you tell me when the first real work was done with the torsion balance or seismograph? I believe these were the first geophysical instruments to be used in actual prospecting for oil structures. Can you tell me too, please, whether these early experiments were successful? What oil fields were discovered through the pioneer use of the instruments?—L. U. N.

Geophysical methods have been used with distinct success in the prospecting for structures favorable for the presence of petroleum, especially in the Gulf Coast area of Texas and Louisiana.

The first concrete result of exploration by geophysical methods was recorded in 1924, when three domes, Nash, Orchard and Long Point in the Texas Gulf Coast region, were discovered with the help of the seismograph and the torsion balance.

The seismic method, based on the fact that mechanical waves set up in the earth by some shock are transmitted at greatly differing velocities in strata of different elasticity, is represented by the seismograph. The gravitational method, based on the fact that minor deviations from the earth's gravitational attraction are caused by local differences in the specific gravity of masses underlying the surface, is represented by the torsion balance. Both instruments were employed prior to 1924, without any clear success, however.

The Rycade Oil Corp. operated the first torsion balance on the Gulf Coast in October, 1922, and the Roxana Petroleum Corp. began work with one of these instruments in the same territory in December of the same year. The United States Coast and Geodetic Survey made some gravity observations at Damon Mound in 1923, with a pendulum apparatus. In March, 1924, the Marland Oil Co. placed the first seismograph on the Gulf Coast and the Gulf Production Co. followed with one two months later. In June that year the Gulf Production Co. began operations with a torsion balance.

USING ICE TO SET CEMENT

I have noted some statements to the effect that it was necessary to dump ice in drill holes in California in order to cool them at the bottom of the hole or casing point enough to permit the cement to set. Is this a fact, and if so, will you please let me know a little more about this practice?—M. O. P.

This department is unable to confirm the statement concerning dumping ice in wells, but it is a fact that temperatures at a depth of 7,100 feet in the Santa Fe Springs Field of California were about 202 degrees Fahrenheit and at this temperature cement will not set properly.

To overcome this condition it is reported that the contractor used about 42 pounds of ice with each 94 pounds of mixing water, in this way chilling the mixing water to about 46 degrees Fahrenheit and when this was used to make the concrete mixture that was placed in the hole, it was found that the concrete job was satisfactory and when sampled later it showed a satisfactory set.

It will be noted that the temperature in this California well at 7,100 feet is somewhat higher than the temperature in the Texon well at Big Lake, Tex., which at 7,000 feet depth showed a temperature of 143 degrees Fahrenheit and at the depth of 8,500 feet had a temperature of 170 degrees Fahrenheit which is still less than the temperature of the shallower Santa Fe Springs well. This is largely accounted for by the difference in formation and the tendency for movement in the California area.

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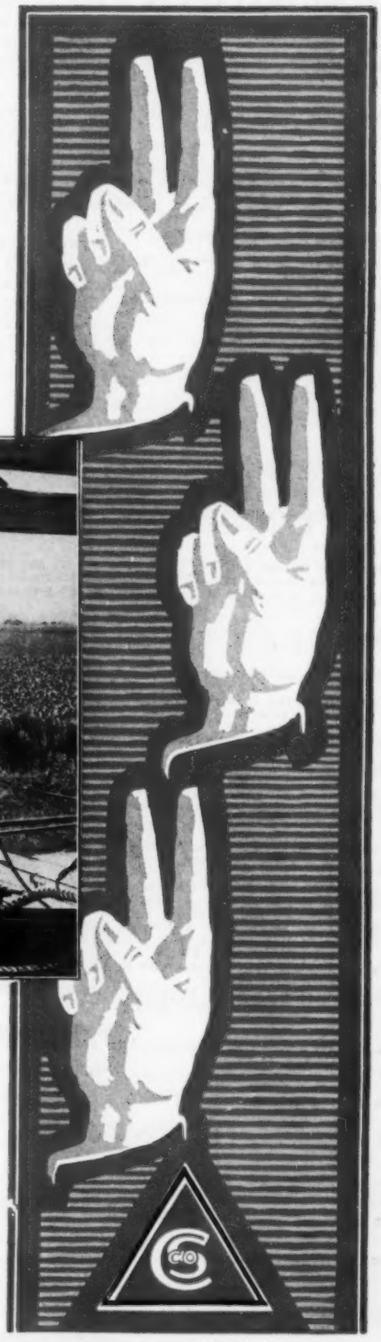
TWO WITHIN 30 DAYS

"SMITH LIKES THEM"



The first machine purchased by Harvey S. Smith Inc. of Houston performed so well that they bought another for use on Smith's Esperson Dome property. Both these machines are the Type "HRB". The one pictured above is the latest installed, and is the most advanced type for deep well drilling and heavy duty where extra service from wire lines is essential. F. P. Hayes is the driller in the picture.

"If Continental Sells It . . . There Is No Better"

THE CONTINENTAL SUPPLY COMPANY
General Offices: St. Louis

THE CONTINENTAL SUPPLY COMPANY Ltd.
224 Traders Bldg., Calgary, Alberta, Canada

CONTINENTAL

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 57)

Longstreet Synd.'s No. 1 Ramsey, NE cor. SW NE, Sec. 33-13-16 ..... Changing to heavy rig and arranging to sidetrack; T.D. 2,802 ft.

Fair et als' No. 1 Hamilton, 500 ft. N, 300 ft. W, SE cor. SE SE, Sec. 1-12-13 ..... Cmtd. 6-in. 2,668 ft; tested 3,000,000 ft. gas; bridged; drilled out found well dead; re-cmtd. 6-in. 2,770 ft; T.D. 2,790 ft.

Magnolia Pet. Co.'s No. 1 Anna Mason, 990 ft. S, 990 ft. E, NW cor. SW, Sec. 27-12-11 ..... Location.

Magnolia Pet. Co.'s No. 2 W. H. Mason, 330 ft. N and W, C, Sec. 28-12-11 ..... Coring shale 3,077 ft.

R. O. Roy's No. 1 Rogers, Sec. 13-13-14 ..... S.D. 2,730 ft.

FRANKLIN PARISH

Davis et als' No. 1 Moore, 600 ft. W, 200 ft. S, NE cor. Sec. 12-11-6 ..... S.D. 1,430 ft.

JACKSON PARISH

Geo. O. Baird's No. 1 Tremont, SE cor. NW SE, Sec. 24-16-1w ..... Drlg. sandy shale 3,660 ft.

LASALLE PARISH

Tunica Pet. Co.'s No. 49 L. & A., 600 ft. S, 300 ft. W, NE cor., Sec. 17-7-2e ..... Standing 200 ft oil; W.O.S.R; T. D. 822 ft.

Tunica Pet. Co.'s No. 50 L. & A., 200 ft. N, 660 ft. E, SW cor. NW, Sec. 16-7-2e ..... Derrick.

Tunica Pet. Co.'s No. 51 L. & A., 660 ft. N, 200 ft. E, SW cor. NW, Sec. 16-7-2e ..... Spudded Aug. 23; cmtd. 10-in. 80 ft; drlg. 720 ft.

MOREHOUSE PARISH

J. P. White's No. 1 Chese-Wymond, Sec. 32-19-6 ..... Drlg. 2,844 ft.

Rainbow Oil Co.'s No. 1 Louisville Cooperage Co., 990 ft. S and E, NW cor. NE, Sec. 33-22-8 ..... Derrick.

NATCHITOCHES PARISH

S. D. McDaniel's No. 2 Clark & Morse, 800 ft. E, 350 ft. N, C, Sec. 23-5-6 ..... Tested 1,000,000 ft. gas and S.W. 8 ft; S.D. for orders; T.D. 2,536 ft.

Nichols & Wilder's No. 1 Clark, 150 ft. W, 250 ft. N, SE cor., Sec. 10-10-8 ..... Rigging up.

Robeline O. & G. Co.'s No. 1, NE SW, Sec. 7-8-9 ..... Drill stem stuck; waiting orders; claim show gas; T.D. 3,230 ft.

OUACHITA PARISH

Ouachita Nat. Gas Co.'s No. 2-B D'Arbonne, SE cor., Sec. 25-19-2e ..... Laying fuel line; arranging to deepen; T.D. 3,349 ft.

Farish & Russell's No. 1 School fee, NE, Sec. 16-16-4 .. Bailing to test; T.D. 4,350 ft.

RAPIDES PARISH

Ayers Bros.' No. 1 Wickliff, 2,790 ft. N, 150 ft. E, SW cor., Sec. 9-5n-2e ..... Rigging up.

RED RIVER PARISH

W. D. Ball's No. 1 Krumholtz, 660 ft. S, 660 ft. E, NW cor., Sec. 32-14-10 ..... Rigging up.

Benedum & Trees Oil Co.'s No. 1 Franklin Realty Co., 350 ft. E, 350 ft. S, NW cor., Sec. 29-11-9 ..... Cmtng. bottom 3,120 ft.

LeGrande et als' No. 1 Sample, Sec. 11-14-11 ..... Rigging up.

D. H. Riddick's No. 1 Johnson, 500 ft. N, 500 ft. W, SE cor., Sec. 17-12-10 ..... Rigging up.

RICHLAND PARISH

Austin & McDonald's No. 1 Millsaps, 660 ft. N, 1,980 ft. E, SW cor. NW, Sec. 17-17-6 ..... Tested 200,000 ft. gas; waiting orders; T.D. 2,510 ft.

Austin & McDonald's No. 2 Millsaps, SW cor., Sec. 17-17-6. Waiting orders; T.D. 2,679 ft.

Austin & McDonald's No. 3 Millsaps, 1,980 ft. S, 660 ft. E, NW cor., Sec. 16-17-6 ..... Cmtd. 6-in. 2,280 ft.

Austin & McDonald's No. 4 Millsaps, NW cor., Sec. 16-17-6. Location.

Austin & McDonald's No. 5 Millsaps, 2,640 ft. N, 1,320 ft. W, SE cor., Sec. 8-17-6 ..... Location.

Palmer Corp.'s No. 2 Miles, 723 ft. E, 660 ft. S, NW cor. NE, Sec. 12-17-6 ..... Cmtd. 6-in. 2,315 ft.

United Carbon Co.'s No. 1 Thornby, 660 ft. W, 650 ft. N, SE cor. NW NE, Sec. 12-16-6 ..... Spudded Aug. 24; cmtd. 12-in. at 188 ft.

SABINE PARISH

R. L. Gay's No. 1-A Bowman-Hicks, 900 ft. S, 200 ft. E, C, Sec. 34-8-12 ..... Rigging up.

R. L. Gay, trustee's No. 4 Bowman-Hicks, SE cor. NW SE, Sec. 14-7-14 ..... Drlg. 1,700 ft.

R. L. Gay, trustee's No. 1 Long-Bell Lbr. Co., NE cor. NW NW, Sec. 26-8-14 ..... Drlg. hard lime 3,200 ft.

R. L. Gay, trustee's No. 2 Sabine Lbr. Co., Sec. 23-7-14 .. S.D. 2,800 ft.

A. H. Tarver's No. 1 Long-Bell Lbr. Co., NW cor. SW NW, Sec. 29-8-13 ..... Small show gas and mud; waiting orders; T.D. 3,535 ft.

A. H. Tarver's No. 2 Long-Bell, 800 ft. N, 800 ft. W, SE cor. SW, Sec. 18-8-13 ..... Drlg. gumbo 1,050 ft.

WEBSTER PARISH

F. M. Fuller's No. 1 Monzingo, 200 ft. N, 200 ft. W, SE cor., Sec. 27-18-8 ..... Derrick.

WEST CARROLL PARISH

W. F. Hyde, trustee's No. 1 Chickasaw Imp. Co., NE cor. NE, Sec. 24-23-11 ..... Spudded Aug. 17; drlg. 100 ft.

ARKANSAS
ASHLEY COUNTY

J. G. Marcum, trustee's No. 1 McGarry, 200 ft. W, 100 ft. S, C, Sec. 9-19-4 ..... Drlg. sandy lime 2,233 ft.

CALHOUN COUNTY

Phillips Pet. Co.'s No. 1 Freeman-Smith Lbr. Co., 300 ft. S, 300 ft. W, NE cor. SW NW, Sec. 25-16-13 ..... Drlg. 3,015 ft.

CLARK COUNTY

Wm. Henry, trustee's No. 1 Clark, Sec. 34-9-21 ..... S.D. 1,200 ft.

COLUMBIA COUNTY

Arpeco Synd.'s No. 1 Dennis, Sec. 11-20-23 ..... Tested S.W. 3,567 ft; drilled to 3,696 ft; tested dry; plugged back to 3,600 ft; bailing to test; T.D. 3,696 ft.

Helena O. & G. Co.'s No. 1 Pickler, Sec. 19-19-22 ..... S.D. 2,762 ft.

Talbot & Markle's No. 1 Copeland, 300 ft. S, 300 ft. W, NE cor. SE NW, Sec. 31-19-19 ..... Location.

FAULKNER COUNTY

Gold Creek O. & G. Co.'s No. 1 Stermer, Sec. 17-4-13 .... T.A. 3,782 ft.

GRANT COUNTY

Jones & Watkins' No. 1 Meek, Sec. 5-4-11 ..... T.A. 1,400 ft.

JOHNSON COUNTY

Ark.-La. P. L. Co.'s No. 2 Bynum, Sec. 12-10-24 ..... Cmtd. 7-in. 3,125 ft; drlg. hard sand 3,185 ft.

Blackwell O. & G. Co.'s No. 1 Wyver, C SW SE, Sec. 21-9-25 ..... Drlg. 5,285 ft.

LINCOLN COUNTY

Pine Prairie O. & G. Co.'s No. 1 Carter ..... T.A. 2,176 ft.

LITTLE RIVER COUNTY

A. L. Buck's No. 1 Greason, NW NW, Sec. 25-12-32 ..... Derrick.

Grotte et als' No. 1 Allen, Sec. 31-12-31 ..... T.A. 2,941 ft.

McDonald & Shaw's No. 1 W. E. Black, 240 ft. N, 450 ft. W, SE cor. SE NE, Sec. 12-13-28 ..... Spudded Aug. 15; cmtd. 10-in. 100 ft; drlg. gummy shale 803 ft.

LOGAN COUNTY

Ark. Nat. Gas Corp.'s No. 1 Hanna, Sec. 26-7-23 ..... Drlg. shale 3,210 ft.

MADISON COUNTY

Phillips Pet. Co. and F. S. Craver's No. 1, C. Sec. 11-14-23. Spudded Aug. 28; drlg.

MILLER COUNTY

E. B. Lenz et als' No. 1 Bossier Co., NW cor. Sec. 13-15-26. Derrick.

OUACHITA COUNTY

Copenhaven et als' No. 1 Warnick, Sec. 2-15-17 ..... Coring 1,662 ft.

Flaucher et als' No 1 Buck, Sec. 7-16-17 ..... S.D. 2,465 ft.

Geo. Khouri's No. 1 A. Wilson, 150 ft. N, 150 ft. E, SW cor. N½ SW SW, Sec. 24-15-18 ..... Coring 2,690 ft.

Lohman et als' No. 1 Fogle, Sec. 18-14-16 ..... S.D. 1,540 ft.

Sundby et als' No. 1 Farris, SW cor. NW SE, Sec. 27-15-16. Setting liner; T.D. 2,111 ft.

The Texas Co.'s No. 1 Avery, 250 ft. N, 250 ft. E, SW cor., Sec. 35-15-15 ..... Began drlg. Aug. 19; cmtd. 10-in. 57 ft; drlg. rock 513 ft.

Timberlake et als' No. 1 Wright, Sec. 25-14-18 ..... S.D. waiting orders 2,907 ft.

Wesson et als' No. 1 Booth, Sec. 12-15-19 ..... S.D. 2,203 ft.

POPE COUNTY

Ark.-La. P. L. Co.'s No. 1 McFaddin, Sec. 15-9-21 ..... Rigging up.

PULASKI COUNTY

Wonder State Dev. Co.'s No. 1 Wilson, 599 ft. W, 24 ft. S, NE cor. NE SW, Sec. 21-2-11 ..... Drlg. 1,400 ft.

UNION COUNTY

Addie & Modisette's No. 1 Union Sawmill, SW cor. SW SE, Sec. 25-19-12 ..... Location.

Joe Modisette's No. 1 U. S. M. Co., 1,120 ft. E, 200 ft. N, SW cor., Sec. 1-18-14 ..... Drill stem test 12 fourbles S.W; 3 ft. sandy shale 2,239-42 ft.

Sam Arrendale's No. 1 Gallagher & Nelson, 200 ft. N and W, SE cor. Lot 5, Sec. 18-18-17 ..... S.D. 2,268 ft.

W. M. Coates, trustee's No. 1 McDuffie, Sec. 32-19-17 .... Cmtd. 6⅝-in. 3,942 ft; to test 4½ ft. sand; T.D. 4,057 ft.

O. W. Estes' No. 1 Ramsey, NW cor. NW SW, Sec. 24-17-14 ..... Derrick.

E. M. Jones' No. 1 Hardy & Murphy, 216 ft. N, 256 ft. W, SE cor. SW, Sec. 34-19-14 ..... Rigging up.

Ohio Oil Co.'s No. 1, Acct. 2, Stout Lbr. Co., 330 ft. S, 330 ft. W, NE cor. NE NW, Sec. 30-16-13 ..... Cored S.W. sand 3,002 ft.

McDonald Bros.' No. 1 Mayfield, Sec. 29-19-15 ..... S.D. 2,210 ft.

Stark et als' No. 1 Ainsworth, NE cor. NW NE, Sec. 8-19-16 ..... Derrick.

T. J. Woodley's No. 1 First Natl. Bank, NW cor., Sec. 34-19-18 ..... Derrick.

VAN BUREN COUNTY

Dr. J. S. Martin, trustee's No. 1 Scanlan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-9-13 ..... Drlg. 50 ft.

WASHINGTON COUNTY

O'Hara & Shetterly's No. 1 Boyd, SE cor. SE NE, Sec. 12-16-32 ..... Spudded Sept., 1928; S.D. 140 ft; resumed drlg. Aug. 25; U.R.; T.D. 150 ft.

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... Cmtd. 6-in. 1,320 ft; S.D. 1,342 ft.

Lincoln Leaseholding Synd.'s No. 1 Lincoln, Sec. 30-15-32. S.D. 1,040 ft; repairs.

WHITE COUNTY

Letona Synd.'s No. 1 Letona, SE cor. NW SW, Sec. 35-9-8. Drlg. dark sandy shale 3,480 ft.

EAST TEXAS
BOWIE COUNTY

Hooks O. & G. Co.'s No. 1 Lee Roseberry, L. T. King Sur.. Temp. abd; T.D. 3,086 ft.

CAMP COUNTY

Rogers et als' No. 1 Enfelt, R. M. Montgomery Sur. .... Tested dry 1,870 ft; S.D. 1,920 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossier, E. Hughhart Sur. ..... Claim show oil and gas; S.D. 1,893 ft.

Shad Harper's No. 1 W. R. Garland, J. Wagley Sur. .... S.D. 1,862 ft.

Johnson Pet. Co.'s No. 2 Randolph, Edward Dean Sur. .. S.D. 1,440 ft.

SHELBY COUNTY

Benedum & Trees Oil Co.'s No. 1 Pickering Lbr. Co., 300 ft. S, 300 ft. W, NE cor. Lot 20, D. T. F. Yordt Sur. ..... Derrick.

Chapperall Oil Co.'s No. 2 Holt, Matthew Moore Sur. .... S.D. for orders 3,004 ft.

Gulf Ref. Co.'s No. 1 Carraway, J. H. Patterson Sur. .... Drlg. hard blue shale and streaks of lime 6,272 ft.

MISSISSIPPI
ALCORN COUNTY

Alcorn Pet. Co.'s No. 1 Matthews, SE cor., Sec. 14-2s-7e.. Drlg. 2,380 ft.

CHICKASAW COUNTY

Hightower & Golson's No. 1 Flemming, NE cor., Sec. 20-13-3 ..... Quicksand 1,240 ft.

HINDS COUNTY

Harry Gerson's No. 1 Edward House, Blk. 16, West Jackson Subd. City of Jackson, in Twp. 5n, Range 1e .... Rig up.

Oscar Brown's No. 1 Riverside (formerly Hennessee et als'), SE cor. SE SW, Sec. 23-16-5 ..... Set 12½-in. 30 ft; S.D. 1,059 ft.

Mrs. Reeder et als' No. 1 State, SE cor. NW NW, Sec. 25-6-1e ..... S.D. 2,895 ft.

South. Christian Institute's No. 1 fee, SE SW, Sec. 29-6-4. Drlg. 190 ft.

HUMPHREYS COUNTY

E. C. Steele et als' No. 1 C. B. Box, SE cor. SE NE, Sec. 25-14-4w ..... Set 12½-in. 60 ft; S.D.

LAUDERDALE COUNTY

Lauderdale O. & G. Co.'s No. 1 Lackey, 990 ft. S and E, NW cor. NE, Sec. 2-7-16 ..... Cored sand 2,276 ft.

Meridian O. & G. Co.'s No. 1 Hauser, Sec. 33-8-18 ..... Drlg. sandy shale and gravel 2,014 ft.

J. R. Smith Oil Co.'s No. 1 C. F. Craig, Sec. 2-6-14 ..... Derrick.

LINCOLN COUNTY

La.-Miss. Oil Co.'s No. 1 Pat Case, NE NE, Sec. 21-8-6 .. Spudded Feb. 17, 1929; S.D. 50 ft; resumed drlg. Aug. 12; cmtd. 12½-in. 368 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-12-19 ..... S.D; waiting for 5 3/16-in. csg. 2,580 ft.

Amory Pet. Co.'s No. 1 Hall, Sec. 8-13-19 ..... Fish. for liner and tools 3,045 ft.

Arkansas Nat. Gas Corp.'s No. 1 Rye ..... Fish. drill stem; hard sandy shale 3,668 ft.

Park Bowser et als' No. 1 Cowart, second hole, Sec. 3-12-19 ..... S.D. 30 ft.

WARREN COUNTY

El Dorado Oil Co.'s No. 1 Dornbush, Sec. 8-18-5 ..... Cored sand 2,011 ft; drlg. 2,100 ft.

YALOBUSHA COUNTY

Philp Bros.' No. 1 James, Sec. 20-11-5 ..... Drlg. hard sand rock 2,947 ft.

TENNESSEE
DECATUR COUNTY

Standard Oil Co. of La.'s No. 1 Wyatt ..... Filled up 600 ft. wtr. in 8 hrs; T.D. 1,254 ft.

Chester County Oil Co.'s No. 1 Montgomery ..... Cmtd. 6-in. 1,040 ft; drlg. hard gray lime 1,165 ft.

ALABAMA
CHOCTAW COUNTY

Robinson & Greer's No. 1 Douglas Oil Co., 320 ft. N, C, Sec. 15-19-2 ..... Drlg. 1,393 ft.

LAMAR COUNTY

Briggs & Knapp's No. 1 Wefel, Sec. 25-12-14 ..... Cmtd. 6⅝-in. 1,040 ft.

SUMTER COUNTY

B. W. Bates' No. 1 fee, Sec. 3-18-1 ..... U.R. surface csg. at 300 ft; to set 6-in.

WASHINGTON COUNTY

S. A. Hobson's No. 1 Hobson Bros., Sec. 9-8-2 ..... Drlg. 1,400 ft.

S. A. Hobson's No. 1 Wilson, Sec. 27-7-1 ..... S.D. 700 ft.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 57)

Gulf Ref. Co.'s No. 19-A Levee Board, 700 ft. E, 220 ft. S, NW cor. NE, Sec. 34-21-16 ..... Rigging up.

Magnolia Pet Co.'s No. 4 Levee Board, 330 ft. S, 330 ft. E, NW cor. NE NE, Sec. 7-20-15 ..... Rig up.

Oil City Oil Co.'s No. 6 Curtis, 985 ft. W, 2,508 ft. S, NE cor. NW, Sec. 10-20-16 ..... W.O.S.R.; 2,293 ft.

Shreveport Oil Corp.'s No. 1 Guy, NW NE, Sec. 32-21-15. Tested S.W. with show of oil; S.D. for orders; T.D. 2,300 ft.

Simplex Oil Co.'s No. 7 Youree-Randolph, 660 ft. N, 660 ft. W, C, Sec. 13-20-15 ..... Tested 50,000 ft. gas 2,300 ft; S.D. for orders; T.D. 2,326 ft.

The Texas Co.'s No. 71 Levee Board, 1,150 ft. E, 700 ft. N, SE cor. SE, Sec. 27-21-16 ..... Cmtd. 8¼-in. 1,795 ft.; drilled plug; bailed; standing 1,000 f., oil; W. O.S.R.; 1,825 ft.

The Texas Co.'s No. 72 Levee Board, 725 ft. N, 210 ft. E, SW cor. SE, Sec. 27-21-16 ..... Derrick.

CADDO PARISH—HOSSTON

Standish O. & R. Co.'s No. 12 Allen, 1,120 ft. W, 330 ft. S, C, Sec. 23-22-15 ..... Tested S.W; show oil 1,060 ft; arranging to set short string 4½-in; T.D. 1,060 ft.

CADDO PARISH—LEWIS

Snake Creek Oil Co.'s No. 1 Levee Board, SW NW, Sec. 9-21-14 ..... Tested dry with show of oil and S.W; S.D; T.D. 2,328 ft.

CADDO PARISH—PINE ISLAND

C. H. French's No. 6 Muslow, 1,150 ft. N, 600 ft. W, SE cor., Sec. 31-21-15 ..... Began drlg. Aug. 22; cmtd. 10-in. 40 ft; drlg. 1,400 ft.

H. J. Bussa's No. 7 Huckaby-Odell, 300 ft. E, 100 ft. N, SW cor. N½ NE NE, Sec. 15-21-15 ..... W.O.S.R.; 1,701 ft.

Dixie Oil Co.'s No. 92 Dillon, SW NW, Sec. 13-21-15 .... Cmtd. cavity 6,106-19 ft; tested 150,000 ft. gas 6,351 ft; W.O.

Double I I Oil Co.'s No. 11 Spell, Sec. 15-21-15 ..... Spudded Aug. 26; drlg. 50 ft.

CLAIBORNE PARISH—HOMER

Oakes et als' No. 1 Richardson, NE SE, Sec. 19-21-7 ... S.D. 1,112 ft; in litigation.

CLAIBORNE PARISH—HAYNESVILLE

Smitherman & McDonald et als' No. 1 Miller, 825 ft S, 660 ft. E, C, Sec. 17-23-8 ..... S.D. for orders; T.D. 4,780 ft.

LASALLE PARISH—URANIA

Air Lift Oil Co.'s No. 3 Mo.-Pac. R. R., Sec. 26-10-1e .... W.O.S.R; 13 ft. broken sand; T.D. 1,525 ft.

Kinney, Hardtner & Randall's No. 1 Kinney, SW SW, Sec. 7-10-2e ..... S.D. 1,320 ft.

Philp et als' No. 1 Urania, SE cor. NE NE, Sec. 1-10-1e.. Tested 500,000 ft. gas and sanded up; C.O; setting liner to test; T.D. 730 ft.

Randall et als' No. 3 Urania, Sec. 1-10-1e ..... S.D. 675 ft.

MOREHOUSE PARISH

Grecian Bend Gas Co.'s No. 1 Seacrease, 2,025 ft. S, 203 ft. W, NE cor. SE, Sec. 14-20-4 ..... Cmtd. 6-in. 2,135 ft.

J. S. Herkness' No. 8 Bowles, 660 ft. S, 660 ft. E, NW cor. NE, Sec. 18-20-5 ..... Cmtd. 6-in. 2,180 ft.

S. D. Hunter's No. 10 Allison, 1,962 ft. E, 660 ft. S, NW cor., Sec. 18-20-5 ..... Cmtd. 8-in. 825 ft.

Magnolia Pet. Co.'s No. 5 U. S., 620 ft. N, 330 ft. W, SE cor. NE SW, Sec. 29-21-5 ..... Drill stem test 2,296 ft; dry; coring.

Southern Carbon Co.'s No. 11 Tensas, SE SE, Sec. 31-21-4. Fishing for drill stem 2,094 ft.

Southern Carbon Co.'s No. 12 Tensas, 660 ft. S, 660 ft. E, NW cor., Sec. 2-20-4 ..... Location.

United Carbon Co.'s No. 2 Patton, 660 ft. N, 660 ft. E, SW cor. SE, Sec. 2-20-4 ..... Location.

United Carbon Co.'s No. 3 Patton, 660 ft. W, 660 ft. S, NE cor. SE, Sec. 2-20-4 ..... Location.

OUACHITA PARISH

Ark.-La. P. L. Co.'s No. 3 McEnery, 1,980 ft. N, 900 ft. E, SW cor., Sec. 28-19-4 ..... Location.

Austin & Jordan's No. 2 Wall, Sec. 11-18-3 ..... Rigging up.

J. B. Bond's No. 2 McEnery, 660 ft. N, 660 ft. W, SE cor., Sec. 19-19-4 ..... Cmtd. 8-in. 870 ft; 6-in. 2,140 ft.

J. S. Herkness' No. 7 Bowles, 1,804 ft. E, 3,165 ft. S, NW cor. NE, Sec. 20-20-5 ..... Tested S.W. 3,311 ft; plugging back.

Imperial O. & G. Co.'s No. 9 Stubbs, 150 ft. S, 150 ft. E, NW cor., Sec. 18-19-4 ..... Rigging up.

G. E. Jordan's No. 1 Anding, NW NE, Sec. 18-18-5 ..... Plugged back to 2,234 ft; T.D. 2,480 ft.

Jordan Drlg. Co.'s No. 4 J. Cole, 2,337 ft. N, 3,201 ft. W, SE cor., Sec. 1-18-3 ..... Cmtd. 6-in. 2,122 ft.

La Del Prod. Co.'s No. 49 fee, 1,320 ft. N, 924 ft. W, SE cor. SW, Sec. 30-20-5 ..... Drlg. in 2,176 ft.

Mack & Pipes' No. 1 Schultz, 610 ft. E, 60 ft. S, southerly cor., Sec. 13-18-4, in Sec. 13-18-4 ..... Tested 640,000 ft. gas 2,230 ft; drilled to 2,260 ft., dry; arranging to plug back to 2,230 ft.

Mack & Pipes' No. 2 Schultz, 2,777 ft. N, 300 ft. W, SE cor. SW, Sec. 13-18-4 ..... Rigging up.

Mack & Pipe's No. 1 Slagle & Johnson, 1,294 ft. N, 309 ft. W, NW cor., Sec. 47, in Sec. 48-18-4 ..... Drlg. shale and boulders 1,875 ft.

Magnolia Pet. Co.'s No. 2 fee 401, 660 ft. S, 660 ft. E, NW cor., Sec. 2-18-3 ..... Location.

Magnolia Pet. Co.'s No. 2 fee 404, 660 ft. N, 660 ft. W, SE cor., Sec. 15-19-5 ..... Cmtd. 8⅛-in. 2,250 ft; tested 9,000,000 ft. gas; T.D. 2,304 ft.

Magnolia Pet. Co.'s No. 3 fee 404, 660 ft. N, 660 ft. E, SW cor., Sec. 11-19-5 ..... Location.

Magnolia Pet. Co.'s No. 4 U. S., Sec. 20-19-5; reported completed July 31, in error ..... Tested dry 2,410 ft; topped red beds 2,440 ft; coring 2,462 ft.

J. Potts, trustee's No. 2 Potts, 425 ft. N, 345 ft. E, NW cor., Sec. 47, in Sec. 7-18-4 ..... Tested 3,000,000 ft. gas; arranging set siphon; T.D. 2,223 ft.

Southern Carbon Co.'s No. 13 Fairbanks, 2,502 ft. N, 1,500 ft. W, SE cor., Sec. 4-19-11 ..... Began drlg. Aug. 22; cmtd. 12½-in. 188 ft; 8-in. 794 ft; drlg. 1,600 ft.

Southern Carbon Co.'s No. 54 fee, 660 ft. N, 674 ft. W, SE cor. NE, Sec. 13-19-4 ..... Drlg. in 2,173 ft.

United Oil & Nat. Gas Products Co. of La.'s No. 2 Cole, 660 ft. S, 594 ft. E, C, Sec. 26-20-4 ..... Derrick.

United Oil & Nat. Gas Products Co. of La.'s No. 5 Guthrie, 6,896 ft. N, 6,022 ft. W, cor. Secs. 49, 26, and 25, Sec. 49-20-5 ..... Derrick.

RED RIVER PARISH

J. H. Askew's No. 1 Lockett, NW SW, Sec. 32-13-10 .... Standing 80 ft. in oil; W.O.S.R.; 2,820 ft.

Joe Danciger et als' No. 1 Pickett, 6,621 ft. S, 2,623 ft. W, NE cor., Sec. 15-13-11, in Sec. 23-13-11 ..... C.O. 2,400 ft; T.D. 2,555 ft.

Root Refineries, Inc.'s No. 1 Home State & Savings Bank, 330 ft. N, 330 ft. W, C, Sec. 8-13-10 ..... Oil show 2,570 ft; drill stem test; S.W; cored sand showing gas 2,598 ft; S.D. 2,667 ft.

RICHLAND PARISH

W. C. Feazel's No. 1 Haynes & Vincent, 275 ft. S, 1,439 ft. E, NW cor. NE, Sec. 17-16-6 ..... Drlg. sand rock 1,250 ft.

W. C. Feazel's No. 2 McCoy, 330 ft. E, 660 ft. N, SW cor., Sec. 33-16-6 ..... Cmtd. 6-in. 2,280 ft.

Feazel, Bendel & Brown's No. 1 J. H. Hunter, 660 ft. S, 660 ft. W, NE cor. NW, Sec. 23-16-6 ..... Location.

Hope Prod. Co.'s No. 1 Boykin, 660 ft. N, 660 ft. E, SW cor. NW, Sec. 21-17-6 ..... Location.

Hope Prod. Co.'s No. 1 Eubanks, NW SE, Sec. 26-17-6 .. Drill stem test white sand 2,926-34 ft; 5,000,000 ft. gas; arranging to set 4½-in. 2,920 ft; T.D. 2,942 ft.

Hope Prod. Co.'s No. 1 J. H. Hemler, 660 ft. S, 660 ft. W, NE cor., Sec. 11-16-6 ..... Location.

S. R. Humble's No. 1 Bunion & Sartor, 660 ft. S, 660 ft. E, NW cor. SW, Sec. 22-17-6 ..... Estimated 3,000,000 ft. gas; small show S.W. 2,481 ft.

International Gas Prod. Co.'s No. 1-A Beck, 650 ft. S, 660 ft. E, NW cor., Sec. 33-16-6 ..... Drlg. 1,900 ft.

Magnolia Pet. Co.'s No. 2 Hatch, 180 ft. N, 660 ft. W, SE cor. NE SE, Sec. 2-15-5 ..... Rigging up.

Magnolia Pet. Co.'s No. 4 C. M. Noble, 400 ft. S, 660 ft. W, NE cor. SE NE, Sec. 35-16-5 ..... Location.

Magnolia Pet. Co.'s No. 1 B. F. Sartor, 1,087 ft. W, 737 ft. N, C, Sec. 17-16-6 ..... Rigging up.

M. L. Meredith's No. 1 Holdness, 1,980 ft. S, 990 ft. W, NE cor., Sec. 15-16-6 ..... Rigging up.

Northern La. Nat. Gas Co.'s No. 4 Boykin, Sec. 20-17-14.. Cmtd. 12½-in. 266 ft; drlg. 288 ft.

Palmer Corp.'s No. 1 Boykin, 660 ft. S, 660 ft. E, NW cor. SW, Sec. 21-17-6 ..... Cmtd. 10-in. 933 ft.

Palmer Corp.'s No. 1 Eubanks, 1,100 ft. N, 350 ft. E, SW cor. SE NW, Sec. 26-17-6 ..... Derrick.

Palmer Corp.'s No. 1 La. Pet. Co., Sec. 22-17-6 ..... Tested estimated 2,000,000 ft gas; W.O. 2,478 ft.

Palmer Corp.'s No. 4 Marshfield, 1,980 ft. E, 1,320 ft. N, SW cor. SW, Sec. 20-17-6 ..... Began drlg. Aug. 25; cmtd. 15½-in. 193 ft.

Palmer Corp.'s No. 1 Mulhern, 660 ft. S, 1,320 ft. W, NE cor. NE, Sec. 29-17-6 ..... Derrick.

Palmer Corp.'s No. 4 Rhymes, 660 ft. S, 1,320 ft. W, NE cor. NW, Sec. 28-17-6 ..... Began drlg. Aug. 24; cmtd. 15½-in. 173 ft.

Southern Carbon Co.'s No. 1 Binion & Sartor, 660 ft. N, 1,320 ft. E, SW cor. SE, Sec. 21-17-6 ..... Fish. for drill stem; T.D. 2,252 ft.

United Carbon Co.'s No. 1 Thornby, 660 ft. W, 660 ft. N, SE cor. NW NE, Sec. 12-16-6 ..... Began drlg. Aug. 24; cmtd. 12-in. 188 ft.

SABINE PARISH—PLEASANT HILL

Ark. Fuel Oil Co.'s No. 2 Horne, 660 ft. N, 300 ft. E, SW cor. SE SW, Sec. 33-10-12 ..... Rigging up.

Magnolia Pet. Co.'s No. 3 E. E. Hall, 460 ft. N, 200 ft. W, SE cor., Sec. 33-10-12 ..... Began drlg. Aug. 26; cmtd. 15½-in. 208 ft.

UNION PARISH

Bahan & Bahan's No. 2 Peake, 1,425 ft. S, 100 ft. W, NE cor., Sec. 17-20-4 ..... Cmtd. 12½-in. 186 ft; 8-in. 875 ft.

Bahan & Bahan's No. 2 School, 1,130 ft. N, 330 ft. W, SE cor., Sec. 10-20-3 ..... Began drlg. Aug. 22; cmtd. 12½-in. 172 ft; 8-in. 900 ft; drlg. 1,850 ft.

WEBSTER PARISH—COTTON VALLEY

La. Oil Ref. Corp.'s No. 9 Gray, 1,980 ft. S, 660 ft. W, NE cor. NW, Sec. 29-21-10 ..... Drlg. broken lime 2,814 ft.

Magnolia Pet. Co.'s No. 1 McCook & Hibbler, C SW SW, Sec. 22-21-10 ..... Coring hard red shale 6,800 ft.

Magnolia Pet. Co.'s No. 5-A Robbins, SE SW, Sec. 21-21-10 ..... Coring anhydrite 4,419 ft.

Palmer Corp.'s No. 1 Sally Coyle, 660 ft. S, 660 ft. W, NE cor. NE SW, Sec. 28-21-10 ..... Began drlg. Aug. 23; cmtd. 12½-in. 450 ft; drlg. 1,102 ft.

WEBSTER PARISH—SAREPTA AND SHONGALOO

J. W. Clark, trustee's No. 1 W. B. Roseberry, W½ SE SW, Sec. 33-23-9 ..... Standing 1,400 ft. fluid; little S. W.; 5 ft. sand; W.O.S.R.; T.D. 2,767 ft.

Pat Hudson's No. 1 Slack, SE NE, Sec. 1-22-9 ..... Standing 1,200 ft. in oil; W.O.S.R.; T.D. 2,745 ft.

F. E. Estes' No. 2 Pardee, 1,270 ft. W, 50 ft. S, NE cor. NW, Sec. 3-22-11 ..... Rigging up.

W. M. Kemp et als' No. 1 R. D. Campbell, 250 ft. S, 250 ft. W, NE cor. NW NE, Sec. 11-22-10 ..... Milling out liner 2,653 ft.

Magnolia Pet. Co.'s No. 1 N. T. Knight, 330 ft. S, 330 ft. E, NW cor. SE SE, Sec. 33-23-9 ..... Drlg. hard sandy shale 2,003 ft.

Magnolia Pet. Co.'s No. 1 Roseberry, 330 ft. N, 330 ft. W, SE cor. NW SE, Sec. 19-23-9 ..... W.O.S.R.; 1,600 ft. oil, 30 ft. wtr. in hole; T.D. 3,763 ft.

Magnolia Pet. Co.'s No. 2 Roseberry, 330 ft. N, 330 ft. W, SE cor. NW SE, Sec. 19-29-9 ..... Location.

Woodmansee et als' No. 1 Boyd, 200 ft. S, 200 ft. E, NW cor. SE SW, Sec. 3-22-11 ..... Derrick.

WINN PARISH—URANIA

Gardner, Hunter & Brown's No. 15 Harper, 550 ft. N, 50 ft. E, SW cor. NW NE, Sec. 26-10-1e ..... Cmtd. 6-in. 1,485 ft; 6 ft. sand; T.D. 1,492 ft.

Gardner, Hunter & Brown's No. 16 Harper, 330 ft. N, 400 ft. E, SW cor. NW NE, Sec. 26-10-1e ..... Derrick.

ARKANSAS

NEVADA COUNTY

C. F. Steele's No. 1 E. W. Groves, Sec. 21-14-20 ..... S.D. for wtr; T.D. 3,821 ft.

MOUNT HOLLY

Houston Oil Co.'s (was McDonald Bros.') No. 2-A Wilson, 330 ft. S, 330 ft. E, NW cor. NE SW, Sec. 25-15-18 ..... W.O.S.R; 2,100 ft oil; 11 ft. sand; T.D. 2,766 ft.

Houston Oil Co.'s (was McDonald Bros.') No. 4-B Wilson, 150 ft. N, 150 ft. E, SW cor. SW NW, Sec. 25-15-18 ..... Derrick.

E. M. Jones' No. 1-A Wilson, 150 ft. S, 150 ft. W, NE cor., Sec. 26-15-18 ..... Tested S.W. 2,300-15 ft; drlg. 3,530 ft.

E. M. Jones' No. 1-C Allen, 200 ft. N, 200 ft. E, SW cor., Sec. 25-15-18 ..... Location.

OUACHITA COUNTY—SMACKOVER

L. H. Hamilton's No. 1 Arnold & Doyle, SE SE, Sec. 23-15-16 ..... Standing 400 ft. in fluid; 23 ft. broken sand; T.D. 2,010 ft.

Magna Prod. Co.'s No. 10-B Linahan, NE cor. SE NW, Sec. 36-15-16 ..... W.O.S.R; 100 ft. fluid from 2¼-ft. sand; T.D. 2,012 ft.

Magna Prod Co.'s No. 11-B Linahan, 25 ft. NE of No. 10-B, in SW cor. SE NW, Sec. 36-15-16 ..... W.O.S.R; 300 ft. fluid; T.D. 2,004 ft.

Phillips Pet. Co.'s No. 1 Clayton, 200 ft. N, 250 ft. W, SE cor. NW NE, Sec. 34-15-15 ..... Swbng. to test 23 ft. broken sand; T.D. 2,035 ft.

Phillips Pet. Co.'s No. 1 Scott, SE cor. SW NE, Sec. 34-15-15 ..... W.O.S.R; 250 ft. oil; 22 ft. broken sand; T.D. 1,979 ft.

Phillips Pet. Co.'s No. 3 Scott, 250 ft. S, 200 ft. E, NW cor. SW NE, Sec. 34-15-15 ..... W.O.S.R; 130 ft. fluid; 29 ft. broken sand; T.D. 2,002 ft.

J. D. Reynolds' No. 1 fee, SE cor. SE SW, Sec. 27-15-15.. Began drlg. Aug. 21; cmtd. 10-in. 35 ft; drlg. 840 ft.

Standard Oil Co.'s No. 12 Arnold, 200 ft. S, 200 ft. W, NE cor., Sec. 26-15-16 ..... Derrick.

Standard Oil Co.'s No. 13 Arnold, 200 ft. S, 200 ft. E, NW cor. NE NE, Sec. 26-15-16 ..... Location.

Standard Oil Co.'s No. 8 Powell, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 34-15-15 ..... Location.

UNION COUNTY—CHAMPAGNOLLE

O. W. Estes' No. 1 Hargett, 200 ft. N, 200 ft. E, SW cor. SW, Sec. 13-17-14 ..... Location.

Gann et als' No. 1 Doss, Sec. 10-17-15 ..... Re-cmtd. 5 3/16-in. 3,160 ft; T.D. 3,240 ft.

Gann et als' No. 1 Schmidt, NW NW, Sec. 15-17-14 ..... Derrick.

Oilwell Corp.'s No. 2-F Perdue, NW NW, Sec. 9-17-15 .. S.D. 3,265 ft.

Pure Oil Co.'s No. 10 E. F. Gregory, 359 ft. W, 123 ft. S, NE cor. SE SE, Sec. 10-17-14 ..... W.O.S.R; 600 ft. fluid 10% S.W. 3,158 ft.

Rovenger Oil Corp.'s No. 3-B Perdue, 330 ft. S, 330 ft. W, NE cor. SE NE, Sec. 9-17-15 ..... Drill stem test 3,169-87 ft; 6 joints S.W; show of oil.

UNION COUNTY—EL DORADO

J. P. Hawkins' No. 1 Goodwin, Sec. 8-17-15 ..... Tested 3,000,000 ft. gas; show of oil; standing 1,000 ft. in S.W.; fishing for drill stem; T.D. 3,210 ft.

Rice et als' No. 1 W. Raitey, 150 ft. S, 150 ft. E, NW cor. SW, Sec. 7-17-15 ..... Spudded July 18; cmtd. 10-in. at 92 ft.

UNION COUNTY—SMACKOVER

E. L. Chapman's No. 1 Bradley, 510 ft. W, 150 ft. N, SE cor. SW NW, Sec. 2-16-16 ..... Standing 300 ft. in fluid; W.O.S.R; T.D. 2,050 ft.

E. L. Chapman's No. 2 Bradley, 200 ft. N, 320 ft. E, SW cor. SW NW, Sec. 2-16-16 ..... Derrick.

(Continued on Page 106)

for

Cracking Units Refineries
Gas Engines Compressors
Pumps Vapor Lines
Crane Flanges, etc.

COPPER ALUMINUM
ARMCO MONEL

—

McCord Radiator & Mfg. Co.
DETROIT

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

(Continued from Page 50)

CUSTER COUNTY

W. E. Witt's No. 1 Wellman, C SE Sec. 1-14-14w .....Rig.

GARFIELD COUNTY

E. L. Love and others' No. 1 White, SE cor. NW Sec. 9-24-6w .....Shut down 5,566 ft.; repairing rig.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w ...Spudded and shut down.
J. M. Henry and others' No. 1 Abraham, SE cor. NW Sec. 4-5-8w .....Rig.

GRANT COUNTY

Bailey's No. 1 Stover, C SW SE Sec. 20-27-5w .....Rig on ground.
Baucher et al's No. 1 Deadman, SW SE Sec. 13-28-4w ..Drlg. 1,750 ft.
Cowden and others' No. 2 Vollmer, CEL NE SW Sec. 22-25-4w .....Shut down 5,640 ft.

GARVIN COUNTY

Gardner Pet. Co.'s No. 1 Halverson, SW cor. NE Sec. 8-4-2 .....Shut down 4,255 ft.

GREER COUNTY

Helmerick & Payne's No. 1 Henck, NW cor. Sec. 23-6-24w. Drlg. 1,043 ft.
I. T. I. O. and others' No. 1 fee, C SW NE Sec. 17-6-24w .....Shut down 1,902 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w ..Shut down 625 ft.

HARMON COUNTY

I. T. I. O. Co.'s No. 1 fee, C SW SE Sec. 17-5-24w .....Rig.

HARPER COUNTY

Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w .....Drlg. 2,425 ft.

HASKELL COUNTY

Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e .....Drlg. 1,190 ft.
Marion Oil's No. 1 Sanuers, NW NE SW Sec. 10-9-18e..Shut down 2,387 ft.
Sanboise Gas' No. 1 Unknown, SW NW SE Sec. 32-9-21e..Shut down 2,100 ft.

HUGHES COUNTY

Amerada and Dixie's No. 1 Ott, SE SW Sec. 15-5-11.....Location.
Irwin et al's No. 1 Jones, SE NW Sec. 30-5-10 .....Rig on ground.
Canady et al's No. 1 Kanard, NW SW Sec. 29-9-12 .....Rig.
Whitney et al's No. 1 Moore, SE SW Sec. 17-5-9 .....Fishing 3,936 ft.

JACKSON COUNTY

Altus Oil Co.'s No. 1 Northington, NE cor. NE Sec. 4-1-20w .....Shut down 2,020 ft.

KINGFISHER COUNTY

Superior Oil Co.'s No. 1 Story, SE cor. Sec. 25-19-5w ....Drlg. 6,035 ft.
Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w .....Drlg. 5,235 ft.
McKenna & Crawford's No. 1 Sturgeon, NE cor. SW Sec. 27-16-6w .....Shut down 4,895 ft.

KIOWA COUNTY

Dean & Adkinson's No. 1 Kent, NW cor. Sec. 6-5-14w ..Location.
Hyde et al's No. 1 Jones, SE cor. Sec. 23-3-18w-50 .....Shut down 490 ft.
S. H. Christian's No. 1 Stone, SE cor. Sec. 18-7-18w ....Rig on ground.
Merrick Oil Co.'s No. 1 Kelly, NW cor. SE Sec. 20-7-17w..Shut down 1,035 ft.
Sloan & Russell's No. 1 Funkhouse, C NE NW Sec. 23-7-17w .....Shut down 2,308 ft.
McWharter and others' No. 1 Sherwood, CWL NW NE Sec. 2-5-17w .....Shut down 1,100 ft.

LEFLORE COUNTY

Red Bank Oil Co.'s No. 1 fee, SE SW NE Sec. 23-9-24 ..Drlg. 4,520 ft.

LATTIMER COUNTY

Limestone O. & G. Co.'s No. 1 Shaw, NW cor. NE NW Sec. 23-5-18e .....Spudded.
Limestone Oil & Gas Co.'s No. 1 McMurray, SW cor. SW Sec. 15-5-18 .....Sandy lime 3,950-54 ft.; 2,000,000 ft. of gas; pulling big pipe.

LINCOLN COUNTY

Morgan & Flynn's No. 1 Johnson, SW NE Sec. 1-16-5...Rigging up machine.
Phillips Pet. Co.'s No. 1 Stephens, SE cor. NW Sec. 29-12-3 .....Drlg. 2,166 ft.

LOGAN COUNTY

Haley & Smith's No. 1 Guier, SE cor. SW Sec. 33-18-3w..Shut down 3,970 ft.

McINTOSH COUNTY

Western Natl. Gas's No. 1 Wells, CEL SE NW Sec. 15-11-17 .....Drlg. 500 ft.
Holden's No. 2 Phillips, C SE SE Sec. 3-9-18e .....Shut down 1,190 ft.
Spring Valley Oil Co.'s No. 1 Carr, SE cor. NE NW Sec. 16-10-13e .....Shut down 2,508 ft.
Patterson and others' No. 1 Smith, SW cor. NW SE Sec. 32-9-16 .....Shot 240 qts. 5,446-5,559 ft:; shot went off up hole; fishing.

MAJOR COUNTY

Earl and others' No. 1 Turner, C NE NE Sec. 23-20-14w..Rig.
Wilson and others' No. 1 Unknown, NE cor. NE Sec. 4-23-16w .....Shut down 510 ft.

MUSKOGEE COUNTY

Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 ...Shut down 300 ft.
Cooper-Badget's No. 1 Young, NW NE NE Sec. 7-12-20e..Shut down 50 ft.

NOBLE COUNTY

Peerless et al's No. 1 Wentz, NW SW Sec. 22-22-1 .....Location.
Blackwell O. & G. Co.'s No. 1 Foster, C NE NE NW Sec. 8-22-1w .....Abandoned 1,000 ft.
Gypsy Oil Co.'s No. 1 Bailey, C NE NE Sec. 24-22-1e ..Drlg. 4,343 ft.
Magnolia Petroleum's No. 1 King, C SE SW Sec. 26-20-1w. Drlg. 4,208 ft.

OKFUSKEE COUNTY

Henry Oil Co.'s No. 1 Smith, NW cor. Sec. 35-12-9 .....Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10 ...Spudding.
Superior and others' No. 1 Carolina, SE cor. Sec. 6-11-7e .....Drlg. 3,290 ft.

OKLAHOMA COUNTY

Ryan & Martin's No. 1 Lawton, NE NW Sec. 3-11-2w ..Rig.
Tom Slick Oil Co.'s No. 1 Martin, C NW NW Sec. 13-13-1w .....Drlg. 2,640 ft.
Mid-Kansas' No. 1 Trosper, NE NW Sec. 19-12-1w .....Wilcox sand 6,840-95 ft.; drill stem stuck.
Hall & Briscoe's No. 1 Holmes, NE cor. SW SE Sec. 10-11-3w .....Shut down 4,750 ft.

PITTSBURG COUNTY

Galbreath's No. 1 Snyder, C W half SW Sec. 28-4-13 ....Shut down 100 ft.
Empire O. & R. Co.'s No. 1 Williams, C NE SE Sec. 33-7-16e .....Rig.
Kerr & Koy's No. 1 Hall, C NW NW Sec. 32-4-12 .....Underreaming 8-in. csg. 2,406 ft.

PONTOTOC COUNTY

Indian Territory Illuminating Oil Co.'s No. 1 McFarland, NW cor. Sec. 4-5-5 .....Location.
Indian Territory Illuminating Oil Co.'s No. 1 Shoate, C NE SE Sec. 1-4-4 .....Location.
Independent and Shaffer's No. 1 Moses, NE SE SW Sec. 10-5-4 .....Location.
Denver O. & R. Co.'s No. 2 Roberts, NE cor., Sec. 36-5-4..Drlg. 530 ft.

POTTAWATOMIE COUNTY

Empire O. & R. Co.'s No. 1 McKown, SW NW Sec. 25-8-4 .....Rig on ground.
Keister & Manning's No. 1 Tibbs, NE SW Sec. 9-8-4 ....Drlg. 2,250 ft.
Amerada's No. 1 Vineyard, NW NE NE Sec. 15-7-3 .....Drlg. 4,342 ft.
Gypsy Oil Co.'s No. 1 Randosh, NW NE Sec. 23-6-4 .....Fishing 3,763 ft.
Frank Moore's No. 1 Fundis, SE NE Sec. 19-7-3 .....Location.
Phillips Pet. Co.'s No. 1 King, NW cor. Sec. 26-8-4 .....Viola lime 4,240 ft., drlg. 4,245 ft.
Shaffer and Margay's No. 1 Murphy, NW NE Sec. 11-6-3 .....Drlg. 3,985 ft.
Cal-Cul Oil Co.'s No. 1 McKnight, NW cor. NE NW Sec. 9-8-3 .....Drlg. 3,935 ft.

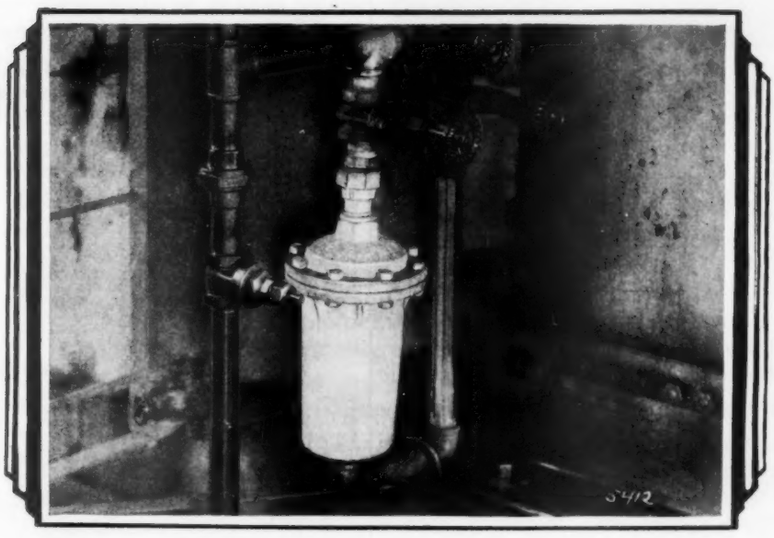
ROGER MILLS COUNTY

L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w ...Drlg. 1,490 ft.

SEMINOLE COUNTY

Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 25-5-5 ....Location.
McCullough Oil Co.'s No. 1 Luckett, NE NW Sec. 28-10-5..Drlg. 3,380 ft.
Prairie & Slick's No. 1 Bettsey, NW SW Sec. 36-6-6 ....Drlg. 1,145 ft.

The popular Steam Trap for draining stills!



No. 2 Armstrong Trap in service in a natural gasoline plant.

Thousands of Armstrong Steam Traps are giving automatic and attentionless condensate drainage service on stills and other process and power steam equipment in the oil and refinery field. The illustration shows an Armstrong installation on a still in a gasoline plant belonging to one of the world's largest oil corporations.

Not only one or two, but *every* feature necessary to entirely satisfactory service is found in the Armstrong Trap. Check the following points against what you are receiving in steam trap service:

—non-airbinding. Entrained air and gases are discharged with the condensate.

—self-scrubbing. The upward, swirling motion of the water carries out sludge before it can settle. Scum is also removed since the discharge is at the top.

—low maintenance. A check of 2,000 traps during 6 years shows the average repairs to be about 3c per trap per year. Many run years without any attention whatever.

—simplicity and small size. All working parts are inside. No special supports are ordinarily used.

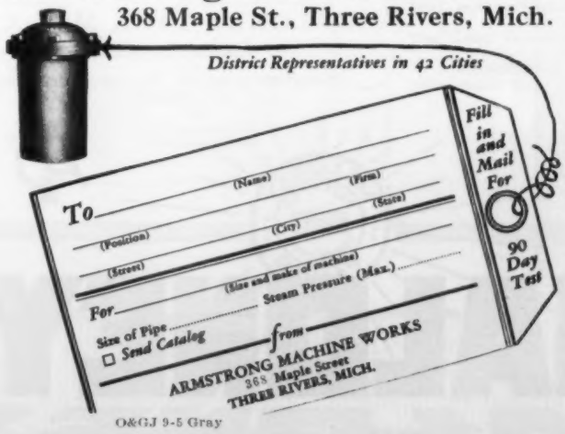
—no wire drawing or leakage of steam.

—made in sizes for pressures to 1350 lbs. and any degree superheat.

Why not have the trap itself prove to you the truth of the above statements? The tag entitles you to test as many as you desire for 90 days without cost to you or obligation.

Armstrong Machine Works

368 Maple St., Three Rivers, Mich.



O&GJ 9-5 Gray

Eight 500-Bbl. Low Type Maloneys on Franks Farm, T. B. Slick, Seminole, Okla.

Reduce Evaporation Losses 60 Per Cent

Conclusive tests on lease storage have repeatedly shown that tanks equipped with pressure valves operating at 14 to 16 ounces pressure will reduce evaporation losses about 60 per cent.

Operators can profit by this money-saving reduction in evaporation by using MALONEY *Vapor-Pressure* Flow and Stock Tanks. These tanks are equipped with a pressure relief valve set at 16 ounces and a vacuum relief set at ½ ounce or more. They are built of 12 gauge steel throughout, and strongly stayed with angle ties, for safe operation under pressure.

Maloney Features:

1. Made of rust-resisting Keystone Copper Steel.
2. Maloney patented close-fitting "crimp" seams and joints.
3. Maloney pliable rubber gasketing and Gaso cement.
4. All seams, including deck seams, reinforced with rigid steel channels.
5. Special bolts of 90,000 pounds tensile strength.
6. Large cleaning out plates set flush with bottoms.
7. Howell Aluminum "4-in-1" Vacuum Pressure Valve and Thief Hatch.
8. Maloney special pearl gray paint.
9. Sizes 12 to 10,000 barrels.
10. Packed in steel bound crates for export.

The Maloney Tank Mfg. Company announces Bolted Steel Tanks conforming with dimensional standards, A. P. I., and carrying the official A. P. I. monogram.

"Alone in Quality"

MALONEY TANK MFG. CO.
Tulsa, Oklahoma

Distributers at All Principal Petroleum Points

KEYSTONE AMERICAN

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MALONEY
ALONE!

Harris' No. 1 Harjocke, SE NE SE Sec. 8-6-6 .....Spudding; shut down.
Prairie's No. 1 Mingo, NW NE Sec. 25-6-6 .....Drlg. 2,363 ft.

SEQUOYAH COUNTY

Hunt and others' No. 1 Unknown, SE cor. NW SW Sec. 12-12-23 .....Drlg. 1,200 ft.
Buffington and others' No. 1 Melcher, C SW NW Sec. 31-12-24 .....Shut down 3,000 ft.

WOODS COUNTY

Peerless O. & G. et al's No. 1 Cromwell, SW SE Sec. 14-28-16w .....Drlg. 900 ft.
E. K. Miller's No. 1 Copenhavers, NW cor. NW Sec. 18-24-13w .....Rigged up and shut down.
Gypsy-Prairie and others' No. 1 Thompson, SE cor. SW Sec. 10-25-15w .....Drlg. 5,785 ft.
Sinclair Oil & Gas Co.'s No. 1 Steward, C SW SW Sec. 33-27-16w .....Drlg. 5,105 ft.

WOODWARD COUNTY

Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-23-17w .....Shut down 1,387 ft.
Prairie Oil & Gas Co. and others' No. 1 James, NE cor. NW Sec. 23-23-17w .....Drlg. 5,020 ft.
Billy's Oil Co.'s No. 1 Watt, C SE Sec. 9-23-20w .....Drlg. 3,955 ft.
Burgoyne Brothers' No. 1 Merkina, SW cor. SE NE Sec. 15-21-19w .....Shut down 1,910 ft.

SOUTHERN OKLAHOMA

BRYAN COUNTY

Marshall et al's No. 1 fee, SE NW NW Sec. 26-5s-7 ....Shut down 600 ft.
Yale Oil Syndicate's No. 1 Craige, C NW NE Sec. 36-9s-9e .....Shut down 1,700 ft.

CARTER COUNTY

L. J. Woodruff's No. 1 Zellnear, NE cor. NW SE Sec. 34-4s-1 .....Drlg. 2,130 ft.
Avon-Dickey's No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 .....Shut down 420 ft.

CHOCTAW COUNTY

Dean & Adkinson's No. 1 Kent, NW cor. Sec. 6-5s-14 ....Location.
Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6-19e .....Shut down 1,346 ft.

COMANCHE COUNTY

Bridwell Oil Co.'s No. 1 Porter, NE SE SE NW Sec. 17-1-11w .....Drlg. 1,025 ft.

COTTON COUNTY

Fain & McGaha's No. 1 Mason, NW SW SW Sec. 29-4s-11w .....Drlg. 3,400 ft.

JEFFERSON COUNTY

Danciger et al's No. 1 Dilley, SE NW Sec. 11-5s-7w .....Rigging up to drill deeper.
Gypsy Oil Co.'s No. 1 Smith, C SW SE SE Sec. 2-7s-7w..Rig.
Pierce & Brown's No. 1 Fisher, SE SW Sec. 13-6s-7w ..Dry and abandoned 2,501 ft.
J. A. Porter's No. 1 Paddock, NE NW NE Sec. 35-5s-7w..Dry and abandoned 3,207 ft.

JOHNSTON COUNTY

Smith & Knisely's No. 1 Lane, E half Sec. 29-1s-7 ....Shut down 2,090 ft.

LATIMER COUNTY

Limestone O. & G. Co.'s No. 1 Shaw, NW NE NW Sec. 23-5-18e .....Spudded.

McCURTAIN COUNTY

Utopia Pet. Co.'s No. 1 Unknown, SE NW Sec. 14-9s-25 ..Location.
Milton et al's No. 1 Vase, SW NW Sec. 26-6s-21 .....Drlg. 1,385 ft.

STEPHENS COUNTY

Pace and others' No. 1 Woolsey, SE SW NE Sec. 4-3s-6w.Dry and abandoned 2,261 ft.
Porter & Monahan's No. 1 Robberson, SE NW Sec. 23-3s-4w .....Set surface pipe at 50 ft.

TILLMAN COUNTY

Cochran & Ridgway's No. 1 Barnes, C NW NE Sec. 16-4s-14w .....Cellar.
Landfair and others' No. 1 Smith, SE SW SE Sec. 6-2s-16w .....Shut down 2,535 ft.

OKLAHOMA PANHANDLE

Skaer's No. 1 Hitch, NW cor. Sec. 25-1-15e .....Shut down 250 ft.

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless otherwise marked)

(Continued from Page 52)

26-16-3e .....Drlg. 2,930 ft.
Milmac's No. 1 Biehler, SW NE Sec. 28-16-4e .....Drlg. 3,001 ft.

ELLIS COUNTY

Streeter & Stearns' No. 1 Leiker, SW NE Sec. 26-13-20w..Rig.
Mid-West Exploration's No. 36 Berens, C SE NW Sec. 12-13-16w .....Drlg. 450 ft.
Phillips Pet. Co.'s No. 1 Harder, NE SW Sec. 8-12-17w..Drlg. 3,983 ft.
Byrens et al's No. 1 Fisher, NW SE Sec. 4-11-20w .....Drlg. 450 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w .....Fishing 2,555 ft.
Finney & Weiner's No. 1 Freeman, SE cor. SW Sec. 24-15-20w .....Spudded and shut down.
Prairie O. & G. Co.'s No. 1 Kutina, C NE SW NE Sec. 29-15-21w .....Rig.
Burger et al's No. 1 Hadley, SW cor. SW NW Sec. 20-11-17w .....Drlg. 3,408-40 ft.; swabbed 80 bbls. 24 hrs.

ELLSWORTH COUNTY

Tatlock et al's No. 1 Sackem, C SW SE Sec. 25-17-9w....Drlg. 560 ft.
The Texas Company's No. 1 Sherman, NE SW Sec. 16-17-6w .....Drlg. 2,395 ft.

GRAHAM COUNTY

Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w .....Drlg. 4,000 ft.

GREENWOOD COUNTY

F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12..Shut down.
Ward & McGinnis' No. 1 Anderson, NE NW SW Sec. 13-25-10 .....Drlg. 1,400 ft.

HARPER COUNTY

Tom Slick Oil Co.'s No. 1 Miller, SE cor. Sec. 13-34-8w .....Drlg. 4,565 ft.
Tom Slick Oil Co.'s No. 1 Thompson, NW cor. Sec. 19-32-6w .....Drlg. 4,606 ft.
Independent & Reserve Oil Co.'s No. 1 Moulds, C NE Sec. 7-24-1w .....Fishing 2,600 ft.

HARVEY COUNTY

Liggett et al's No. 1 Regier, C SE NW SE Sec. 2-23-3w..Rig.
Payne and others' No. 1 Ady, NE NW SE Sec. 16-24-1 ....Drlg. 2,155 ft.
Deering-Marshall's No. 1 Dick, Sec. 4-25-2w .....Drlg. 3,078 ft.
McCulloch et al's No. 1 Prouty, NW cor. SW Sec. 3-23-1w .....Fishing 2,020 ft.
Roth & Parrent's No. 1 Brombrowsky, NW cor. Sec. 26-22-1e .....Drlg. 3,040 ft.
Mrs. Gay et al's No. 1 Grove, C NW NE NW Sec. 29-23-1w .....Shut down 3,102 ft.
Jolly & Ogg's No. 1 Randall, NE cor. NE Sec. 11-24-1w ..Shut down 3,444 ft.
Rosenthal et al's No. 1 Ingalls, C NW SW Sec. 24-23-3w..Drlg. 3,605 ft.
Jolly & Ogg's No. 1 Hupp, SE cor. NE Sec. 22-23-1w ....Fishing 3,220 ft.

HODGEMAN COUNTY

Phillips Pet.'s No. 1 Hausman, NW NE Sec. 30-22-22w ..Drlg. 1,660 ft.

JEFFERSON COUNTY

Wichita Oil Co.'s No. 1 Simpson, NW cor. SW SW Sec. 19-10-17 .....Rigged up and shut down.

KIOWA COUNTY

British-American's No. 1 Woodward, NE cor. Sec. 35-27-17w .....Drlg. 4,387 ft.
British American-M. M. Valerius, NE cor. Sec. 35-27-17w..Location.

KINGMAN COUNTY

White Eagle's No. 1 Lorenz, C NE SW SE Sec. 25-27-5w..Rig on ground.
Gypsy Oil Co.'s No. 1 Kincaid, NE cor. NW Sec. 18-29-5w .....Siliceous lime 4,513-33 ft.; fishing.

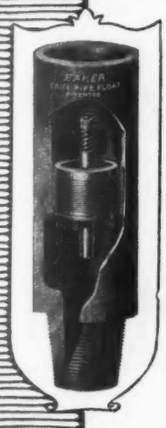
BAKER

Advertisement *No. 8699*

To Whom It May Concern:

This advertisement, caused to be published by Baker Oil Tools, a Corporation, located in the corporate city of Huntington Park, California,

WITNESSETH: It having been demonstrated during the past five years that the purchase and consistent use of the Baker Drill Pipe Float on the Drill Pipe string of any oil well has certain General, Specific, and Emergency Benefits to the purchaser and user thereof, the said purchase and standardized use thereof is strongly recommended for the following reasons:



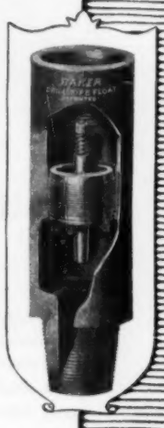
Full Line on Display Booth No. 99 Oklahoma Building

General Benefits Derived Herefrom:

It being deemed wise and profitable to conserve the monies invested in the equipment which is used in going down to the pay sand for the purpose of bringing in a producing well, and

It being admitted that any delays therein are calculated to be exasperating and expensive,

It therefore follows that the Baker Drill Pipe Float, through its function of insuring the safety of the drill pipe string, and through its other functions as detailed under "Emergency Provisions and Benefits" following, confers upon the said purchaser and user certain General Benefits of inestimable value from the standpoints of both time and money.



Emergency Provisions and Benefits Hereunder:

Due consideration, ingenuity, and foresight having been brought to bear on the designing and perfecting of the Baker Drill Pipe Float, with its Patented Valve Assembly, certain advantages accrue to the purchaser and user thereof in emergencies, to-wit:

The Baker Drill Pipe Float prevents the plugging of the drilling bit on its way down the hole or while in use for drilling purposes.

The Baker Drill Pipe Float makes it possible to spud safely through an unexpected bridge or other obstruction which may be encountered on the way down.

The Baker Drill Pipe Float eliminates all danger of disagreeable "wet jobs".

Export Sales Office:
25 Broadway, New York

Mid-Continent Branches:
Tulsa, Okla.
Houston, Texas

BAKER OIL TOOLS, INC.
Box L, Huntington Park, California
California Branches:
Coalinga, Taft, Bakersfield, Ventura

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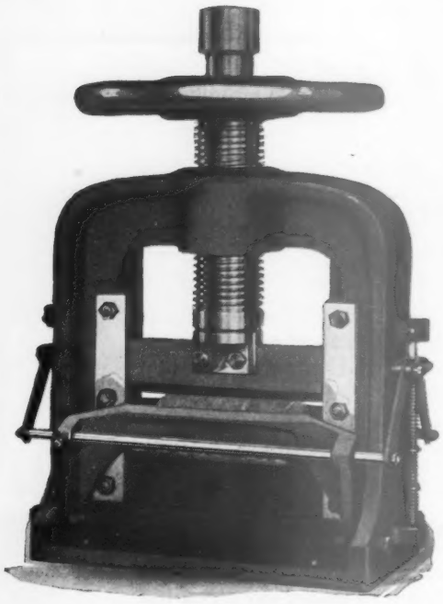
B. & A. SPECIALTY CO.
220 E. Brady St., Tulsa, Okla.
2301 Commerce St., Houston, Texas

SHARP-8-'29.



Split Your Diamond Drill Cores

A diamond drill core costs money. It is worth it, because drill cores preserve fossil evidence and show changes in stratification, color, texture, saturation and porosity of oil sands—information of great value in your structure tests.

Perhaps there are occasions when you would like to have duplicate or even triplicate core samples, so that a complete core record of specific drilling can be kept in more than one place. It is perfectly easy to secure duplicate core records through the use of a Longyear core splitter, as many operators have found.

Should occasion arise for chemical analysis, one-half of the core lengthwise may be used for a laboratory sample, leaving the other half intact as a permanent core record.

The Longyear core splitter is a product of our own design to halve or quarter rock cores longitudinally. The core is clamped in a horizontal position on the lower plate and the upper plate is lowered by means of a hand wheel attached to the threaded spindle until in firm contact with the core. A quick, sharp blow of the hammer on the shaft head splits the core. The splitter handles the core rapidly and is built to stand punishment.

The core splitter is made in three sizes, for cores 15/16 to 2 inches, from 1⅜ to 3½ inches, and from 4 to 6 inches, the latter being operated by hydraulic pressure.

We are glad to answer all inquiries regarding this equipment. Write for our new bulletin No. 30 concerning these Longyear core splitters.

E. J. Longyear Company
Minneapolis, Minnesota, U.S.A.

LANE COUNTY

Robinsen's No. 1 Dickerson, Sec. 11-18-27w .....8-in. csg. 2,625 ft.
Blankenship Pet. Co.'s No. 1 Schaeffer, NE cor. NE Sec. 24-16-28w .....Spudded and shut down.

LYON COUNTY

Blair et al's No. 1 Martindale, C NW NE NE Sec. 27-21-11 .....Drlg. 1,606 ft.
Gordon & Stats' No. 1 Murphy, NW NE Sec. 32-21-11 ....Shut down 2,020 ft.

MARSHALL COUNTY

Irwin et al's No. 1 Cooper, NE NW Sec. 10-3-7e .....Shut down 2,240 ft.

MARION COUNTY

White Eagle's No. 1 Voker, NE NW Sec. 24-17-2 .....Rig on ground.
American O. & R. Co.'s No. 1 Urie, NW SW NW Sec. 10-17-3 .....Rig.
Empire's No. 1 Reising, NE NW NW Sec. 34-20-2 .....Rig.
Davis et al's No. 1 Bartel, SE NE Sec. 1-19-1 .....Spudding.
Shell Pet. Corp.'s No. 1 Scully, NW NE Sec. 34-18-2e ....Drlg. 2,715 ft.
Hobworth et al's No. 1 Skiles, SE NW NW Sec. 30-21-3e..Drlg. 3,198 ft.

McPHERSON COUNTY

McPherson O. & G. Co.'s No. 1 Sorenson, C SE Sec. 23-18-2w .....Rig.
Lario et al's No. 1 Diener, SE SW Sec. 10-20-1w .....Drlg. 1,550 ft.
Perry et al's No. 1 Wade, C SE Sec. 20-19-4w .....Rig.
E. W. Marland's No. 1 Swanson, NE SW NE Sec. 36-18-4w.Drlg. 2,560 ft.
Slick, Pryor & Lockhart's No. 1 Gratton, C NE NW NW Sec. 34-20-3w .....Underreaming 2,150 ft.
Helmerich & Payne's No. 1 Klassen, SE NE NE Sec. 14-21-1w .....Shut down 2,390 ft.
McPherson Gas Co.'s No. 1 Chinberg, NW cor. Sec. 18-19-2w .....Casing landed at 3,045 ft.; 20 bbls. in 17 hrs.
McPherson O. & G. Co.'s No. 1 Rasmusson, SW cor. Sec. 8-18-3w .....Drlg. 2,600 ft.
Ted Washabaugh's No. 1 Vosshell, NE cor. NE Sec. 9-21-3w .....Will complete as gas well; skid rig.
J. H. Tatlock's No. 1 Hayer, C SW NE Sec. 32-20-1w ..Wilcox 3,474-79 ft.; water; dry and abandoned 3,612 ft.

MORTON COUNTY

White & Cheney's No. 1 Love, NE cor. Sec. 11-34-42w....Rig on ground.

NESS COUNTY

E. W. Marland, Inc.'s No. 1 Moses, NE SE Sec. 7-18-25w..Drlg. 3,500 ft.

OSAGE COUNTY

Goebel-Bending's No. 1 Bartee, C SW SW Sec. 28-17-15..Drlg. 1,215 ft.

OSBORNE COUNTY

Phillips Pet. Co.'s No. 1 Greive, NW SE NE Sec. 6-7-12w..Drlg. 2,265 ft.
Mid-Kansas' No. 1 Boyce, SE cor. NW Sec. 18-6-13w ..Drlg. 2,150 ft.
Trees Oil Co.'s No. 1 Payenter, NE cor. SE SE Sec. 22-6-15 .....Shut down 3,900 ft.

PAWNEE COUNTY

F. C. Troupe's No. 1 Lovett, CEL NE NE Sec. 31-21-16w.Shut down 1,560 ft.

PHILLIPS COUNTY

Watsonian-British American's No. 1 Wellman, C SW SW Sec. 34-2-19w .....Drlg. 3,720 ft.

PRATT COUNTY

O'Haver & Jones' No. 1 Lunt, C SW NW Sec. 15-28-14w..Drlg. 3,515 ft.

RENO COUNTY

Kaiser & Murphy's No. 1 Friessen, SE cor. NE Sec. 6-22-4e .....Location.
Wilson et al's No. 1 McPhaeters, C S half NW Sec. 22-26-8w .....Rig.
Witt's No. 1 Olsen, C SE NW Sec. 14-22-6w .....Rig.
Skelly Oil Co.'s No. 1 Birkett, NE SW Sec. 30-24-7w ....Drlg. 3,065 ft.
Milmac Oil Co.'s No. 1 Strickley, SW cor. NW Sec. 17-26-5w .....Drlg. 3,354 ft.

RICE COUNTY

Derby Oil Co.'s No. 1 Johnson, C NW NE SE Sec 24-20-6w .....Drlg. 1,055 ft.
Milmac's No. 1 Cain, C SE Sec. 29-19-7w .....Spudded; shut down.
Allison & Fitzwilliams' No. 1 Poland, NE cor. SW NE Sec. 36-19-8w .....Cellar.
Higgins & Steinbuchel's No. 1 Shurr, NE cor. SW Sec. 21-20-10w .....3,278-80 ft.; 100 bbls. showing; testing by swabbing; shut down.
Curtis et al's No. 1 Green, C NW Sec. 33-19-6w .....Location.
Danciger et al's No. 1 Bell, C SW Sec. 16-19-8w .....Location.
Langston et al's No. 1 Shumway, C SW Sec. 2-20-9w ...Location.
McCullough et al's No. 1 Williams, C NE Sec. 35-20-8w..Location.

RILEY COUNTY

Grey et al's No. 1 Smith, NE SE Sec. 30-6-6 .....Drlg. 1,930 ft.
Derby & Shaw's No. 1 Lindstrom, NE cor. Sec. 32-7-5e ..Drlg. 2,056 ft.

RUSSELL COUNTY

Prairie Oil & Gas Co.'s No. 1 Brungardt, C NW SE NW Sec. 31-12-16w .....Drlg. 360 ft.
Empire and Prairie's No. 1 Bocks, C SE NE NE Sec. 23-15-14w .....Drlg. 925 ft.
Allison & Fitzwilliams' No. 1 Mohenny, NW SE Sec. 5-14-12w .....Drlg. 3,354-81 ft.; water; aband.

ROOKS COUNTY

Kruger et al's No. 1 Stels, NW SE SW Sec. 12-9-16w ..Shut down 50 ft.
Burford-Brim's No. 1 Toxa, Sec. 22-9-17w .....Spudded; shut down.

RUSH COUNTY

Sinclair Oil & Gas Co.'s No. 1 Seur, C SW NW NW Sec. 8-18-17w .....Drlg. 3,768-70 ft.; water.
Danciger Oil Ref. Co.'s No. 1 Swindt, SW cor. Sec. 22-17-17w .....Fishing 3,755 ft.
Central Commercial Oil Co.'s No. 1 Brock, SE cor. SW SW Sec. 12-17-16w .....Shut down 50 ft.
Danciger Oil Ref. Co.'s No. 1 Pivonka, NE cor. SW NE Sec. 17-19-17w .....Drlg. 3,785 ft.

SALINE COUNTY

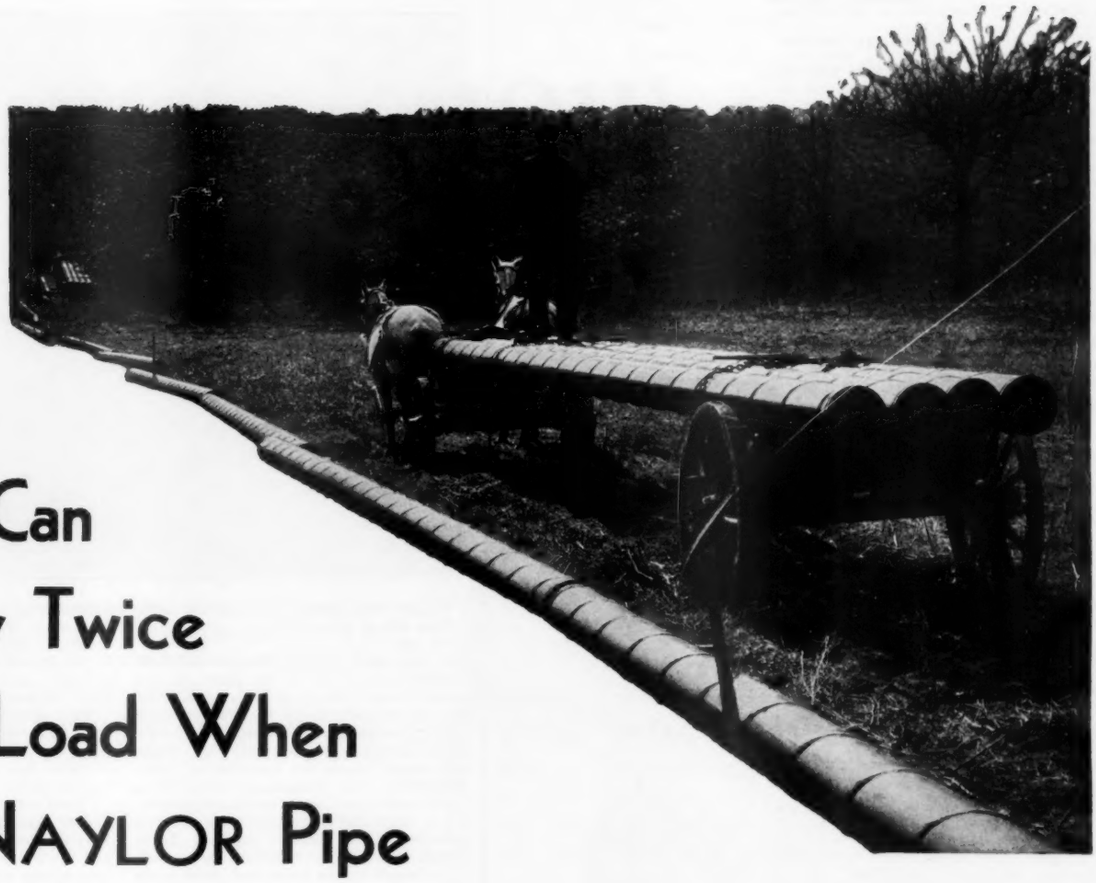
Dixie Oil Co.'s No. 1 Thorstenburg, NW NE Sec. 10-16-3w .....Drlg. 700 ft.
Austin et al's No. 1 Olsen, NW SW SE Sec. 10-15-4w ..Shut down.
Templeman's No. 1 Lanbengager, C SW Sec. 20-15-5w ..Drlg. 2,535 ft.
Twin Mounds' No. 1 Weis, NW NE NW Sec. 20-13-4w .....Drlg. 300 ft.
Dixie Oil Co.'s No. 1 Muir, C SW SE Sec. 6-15-2w .....Shut down 3,126 ft.

SEDGWICK COUNTY

Fleeger D. F.'s No. 1 Ottaway, C SW NW Sec 16-28-2w..Rig.
C. B. Davis' No. 1 Kinkead, NE cor. Sec. 14-27-1 .....Drlg. 2,360 ft.
Marland and Amerada's No. 1 Sensroth, NW cor. Sec. 25-28-4w .....Drlg. 2,500 ft.
Boyle's No. 1 Sandusky, NW NE SE Sec. 34-26-1w ....Drlg. 1,590 ft.
Lario O. & G. Co.'s No. 1 Calkins, SW cor. SE Sec. 7-27-2e .....Drlg. 2,965 ft.
E. W. Marland's No. 1 Huggins, SE NW SW Sec. 30-27-2 .....Drlg. 2,320 ft.
Johnson & Marshall's No. 1 Roy, NE cor. SE SW Sec. 23-29-1w .....Drlg. 3,420 ft.
Lario O. & G. Co.'s No. 1 Teachorff, NE cor. SW Sec. 27-29-1w .....Drlg. 2,800 ft.
Kyle et al's No. 1 Pinney, SW NW SE Sec. 29-28-1w ....Shut down 50 ft.
T. B. Slick's No. 1 Rosenhagen, SW SE NE Sec. 33-27-4w .....Wilcox sand 4,186-91 ft.; water; total depth 4,343 ft.; aband.
Hammond & Stout's No. 1 Roeder, SW NW Sec. 23-27-2w .....Drlg. 4,040 ft.
Twist et al's No. 1 Armstrong, NE NW Sec. 28-26-1e ...Rig; spud.; shut down.
Barnett O. & G. Co.'s No. 1 Davidson, NW cor. NW SW Sec. 27-26-1e .....Shut down 2,668 ft.
Kellar & Lewis' No. 1 Buckles, NW cor. SE Sec. 3-28-1w..Fishing 975 ft.
Twist et al's No. 1 Joseph, CNL SW SE Sec. 4-26-1w ....Shut down 1,980 ft
Miller Wentz' No. 1 Shaffer, NE cor. NW Sec. 9-27-2w ....Viola 4,012-18 ft.; water; aband.
Washabaugh et al's No. 1 Harrison, NW cor. NE NE Sec. 3-26-2w .....Drlg. 2,680 ft.
LaFont et al's No. 1 Carlton, C SE SE SW Sec. 24-28-1e..Shut down 1,685 ft.

STEVENS COUNTY

Trees Oil Co.'s No. 1 Thompson, C NE SW Sec. 3-35-38w..Shut down 500 ft.



You Can Carry Twice The Load When It's NAYLOR Pipe

ON this job four forty foot lengths of ten inch Naylor Pipe make a wagon load. With ordinary wrought pipe only two lengths could be carried.

Due to its unique, electric welded spiral lock-seam structure, Naylor Pipe is the lightest pressure pipe you can buy. It carries the same pressures as standard weight wrought pipe, yet weighs only about half as much.

Particularly where going is difficult this weight saving means a time saving and a haulage saving.

Naylor Pipe saves one-third and more in pipe laying costs, and then keeps on saving, for Toncan Iron has a superior resistance to rust and corrosion that makes Naylor Pipe last longer.

Many miles of Naylor Pipe are now proving their economy in pipe line service, conveying oil, gas and water.

NAYLOR PIPE COMPANY

Main Office and Plant, 1230 East 92nd Street, Chicago

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Naylor Pipe

Mo-lyb-den-um

IRON

Standardized Naylor Pipe is made in sizes 6" to 12" I. D. and 14" to 20" O. D. in any uniform length desired up to 40' 0". Ends made to wrought pipe standards for all types of coupling.

Where corrosion resistance is not a factor, Naylor Pipe can be furnished in steel.

Toncan Copper Molybdenum Iron is a development of Central Alloy Steel Corporation, the world's largest and most highly specialized alloy steel producers. It possesses a superior corrosion resistance, making it the favored pipe material.

W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w ..... Shut down 1,320 ft.

SHERMAN COUNTY

A. L. Henson et al's No. 1 Murry, NE cor. SE NW Sec. 22-7-40w ..... Shut down 3,035 ft

SMITH COUNTY

Phillips Pet.'s No. 1 Clydesdale, SE NW Sec. 23-5-14w .... Drlg. 2,200 ft.

SUMNER COUNTY

Lario O. & G. Co.'s No. 1 Henderson, NW SW Sec. 21-30-1w ..... Rig.
E. K. Carey & Larado Oil Co.'s No. 1 Welsch, SW SE Sec. 9-34-1e ..... Drlg. 2,120 ft.
Mid-Continent Pet. Corp.'s No. 1 Clark, SE cor. Sec. 31-34-3w ..... Drlg. 3,540 ft.
Shell Pet. Corp.'s No. 1 Armstrong, NE cor. Sec. 12-33-1e. Drlg. 340 ft.
Gypsy & Blankenship's No. 1 Robeck, C SW SW Sec. 27-34-4w ..... Drlg. 4,890 ft.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w ..... Rig.

TREGO COUNTY

Prairie Oil & Gas Co.'s No. 1 Kutina, C NE SW NE, Sec. 29-15-21w ..... Rig.
Phillips Pet. Co.'s No. 1 Spitz, SE cor. Sec. 24-12-25w.... Rig on ground.
Mid-Kansas' No. 1 Ridgeway, NE SW Sec. 28-12-21w .... Drlg. 1,580 ft.
Day et al's No. 1 Gugler, SW NE NE Sec. 26-12-21w ..... Shut down 50 ft
Day et al's No. 1 Unknown, NE NW SW Sec. 2-11-21w .... Shut down 2,910 ft.

WASHINGTON COUNTY

McCool & Vincent's No. 1 Linn, NW cor. NE Sec. 27-4-3.. Drlg. 2,300 ft.

WALLACE COUNTY

Morton & Entyre's No. 1 Parker, SE cor. NW SW Sec. 20-13-41w ..... Spudded; shut down.

WILDCAT OPERATIONS IN NEBRASKA

FRANKLIN COUNTY

U. R. Drlg. Co.'s No. 1 Brunkle (twin well), C NW SW NE Sec. 2-3n-13w ..... Rig.

CHASE COUNTY

Chase Pet. Co.'s No. 1 Ingold, C NE Sec. 24-6n-38w .... Total depth 4,050 ft.; cementing 6-in. csg.

FURNAS COUNTY

Southwestern Pet. Corp. of Nebraska's No. 1 Montague, SE SW SW Sec. 28-1n-22w ..... Drlg 1,750 ft.
Graham Bros.' No. 1 Edwards, NW SW Sec. 13-2n-22w.. Shut down 3,150 ft.

WEBSTER COUNTY

Mid-States Exploration Co.'s No. 1 Platt, C SE one-half Section 3-1n-11w ..... Shut down 555 ft.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 99)

E. L. Chapman's No. 1 Purifoy, Sec. 2-16-16 ..... Drlg. 1,800 ft.
E. M. Jones' No. 1 H. Murphy, 211 ft. S, 211 ft. E, NW cor. Lot 3, NW, Sec. 2-16-15 ..... Began drlg. Aug. 19; cmtd. 10-in. 150 ft; drlg. 1,295 ft.
A. H. Ramage's No. 1-A James, Sec. 6-16-15 ..... Ins alling vacuum system; T.D. 1,984 ft.
J. D. Reynolds' No. 1 fee, SE cor. SE SW, Sec. 27-15-15.. Rigging up.

EAST TEXAS

HARRISON COUNTY

Nick Barbare's No. 1 Abney, NE cor. J. J. Blair Sur. ... Rigging up.
Mason et als' No. 1 Dean, J. W. Crofts Sur. ..... Drlg. red shale 2,415 ft; missed Woodbine sand.

PANOLA COUNTY

T. C. Adams' No. 6 Adams, B. C. Jordan Sur. ..... Began drlg. Aug. 19; cmtd. 10-in. 42 ft; coring 926 ft.
T. C. Adams' No. 7 Adams, B. C. Jordan Sur ..... Location.
Ark-La. P. L. Co.'s No. 1 Brumble, 541 ft. S, 544 ft. W, NW cor. J. Womack Sur., in B. C. Jordan Sur. ..... Pulled liner; arranging to deepen; T.D. 1,954 ft.
Eureka Nat. Gas Co.'s No. 1 Jeter, 300 ft. S, 300 ft. W, NE cor. John Womack Sur. ..... Spudded Aug. 6; cmtd. 10-in. 82 ft; drlg. 440 ft.
S. H. Gardner's No. 4 Roquemore, 5,176 ft. E, 4,432 ft. S, NW cor. B. C. Jordan Sur. ..... Derrick.
Magnolia Pet. Co.'s No. 4 T. C. Adams, E. Jones Sur. .. Coring sandy shale 2,634 ft.
Magnolia Pet. Co.'s No. 16 Carrie G. Steele, B. C. Jordan Sur. ..... Coring sandy shale 2,657 ft.
Magnolia Pet. Co.'s No. 1 Leigh-Trosper, B. Stephenson Sur. ..... Whipstocked csg. 2,100 ft; T.D. 2,618 ft.
Natural Gas Prod. Co.'s No. 1 Mays, 1,550 ft. W, 500 ft. N. SE cor. Jane Thorpe Sur. ..... Drlg. 2,340 ft.
D. Thompson's No. 3 Trosper, Jane Thorp Sur. ..... Began drlg. Aug. 17; cmtd. 10-in. 80 ft; drlg. 1,800 ft.
Paul C. Warren's No. 1 F. M. McNeese, A. Booker Sur. . Derrick.

JOHN B. TONKIN LEADER IN THE GAS INDUSTRY

(Continued from Page 41)

curiosity boiler over. "What's that for?" he asked.

"Wait and see," was the enigmatic answer.

When the two rode back later in the day they stopped again at the lonesome rock. Again they climbed up to it through thick underbrush. The half-dollar had vanished. In its place was a pint bottle filled with a liquid that looked like water. Mountain dew, the first Mr. Tonkin ever had seen!

"Where'd that come from?" inquired Mr. Tonkin.

"Don't know," was the reply.

"Well, who made it?" "Where's the still?" "Who brought the bottle to this spot?"

"Don't know," was the answer to each question. "All I know about it," said Mr. Jacobs, "is that if you leave your money in the old mountaineer's crypt you'll find a bottle of this stuff when you come back—that is, if you don't try anything funny. Make a false move and —well, you'll be needing a tomb yourself."

By way of emphasizing the importance of open movements, free from the faintest hint of stealth, Mr. Jacobs recounted how he once had stumbled upon a moonshine still while hunting in the mountains of the region. The owner of the still, believing the intruder was a government agent, declared his intention of putting a bullet in his head. The pipe line man succeeded in convincing the mountaineer that he was not a "revenoor" and he was allowed to go.

Same Jobs in Other Companies

Besides being vice president and general manager of the Peoples Natural Gas Co. Mr. Tonkin holds similar offices in two affiliated organizations. One of these is the Columbia Natural Gas Co., serving communities in western Pennsylvania. Formerly it was the American Natural Gas Co. and the Peoples acquired its properties in 1925. The other is the Hope Construction & Refining Co. This company was organized to take over the oil and gasoline properties of the Peoples in 1916, and Mr. Tonkin was made vice president and general manager of the Pennsylvania division.

Mr. Tonkin has the distinction of having supervised the drilling of the first really deep natural gas producing well. It was completed November 27, 1924, near Latrobe, Pa., at the depth of 7,756 feet.

Some idea of the spirit of co-operation and team work that pervades the Peoples Natural Gas Co. organization may be obtained by noting how it handled a critical situation on December 18, 1926, when a break occurred in the company's main 20-inch line. Mr. Tonkin himself has written a vivid account of that memorable day. The following is quoted from it:

When the Test Came They Were Ready

"Employes scattered along the 2,600 miles of Peoples pipe lines tasted the excitement as word of the explosion spread and orders came for them to man their posts and stand ready for action. For 15 minutes the pressure skidded downward, halting at 30 pounds while efforts were made to find the blowout. Exactly 45 minutes after the explosion occurred the break had been found, gas by-passed around it, pressure again was on the upgrade and what threatened to be a serious consumer shortage was almost miraculously averted.

"J. L. Ridgway and Joe Chilcote, division foremen, reached the scene of the blowout first. They found a roaring tower of flame belching from the broken line. Gas was pouring out of both ends of the break at the rate of approximately 6,000,000 feet an hour. The blown joint was found more than 200 feet away. The pressure had forced this 1,200-pound piece of pipe up through 6 feet of earth and catapulted it through the air.

"Pipe line and repair crews toiled through the rough weather until the 20-inch line again was in operation. By midnight the line had been repaired with a new joint and the gas was being routed as usual."

Credit for the feat is given by Mr. Tonkin to the men under him.

Mr. Tonkin was president of the Pennsylvania Gas Men's Association in 1926 and he is active in the work of the Natural Gas Department of the American Gas Association. He is a director of the Pittsburgh Trust Co. and of the Terminal Trust Co. in Pittsburgh. He also is a director of the Passavant Hospital in that city. He is a member of various Masonic orders and of Syria Temple of the Shrine. He has served five terms as president of the Pittsburgh Field Club, which he helped to organize in 1914.

IT'S GETTING TO BE A HORSELESS AGE ALL RIGHT

Whassa use getting a horse for such a little job of plowing?

No use.

So here we have Ovie Tucker and Earl Deever in the role of the more or less patient team, with U. S. Ellis as skinner. All are roustabouts on the Teewee lease of the Carter Oil Co. in the New Little River district of the Seminole Field. They and others, under the direction of Jesse Wakefield, head roustabout, were doing a little plain and fancy landscape gardening to make the camp look more like the pictures in the nursery catalog. In a vacant area between buildings they wanted to loosen up the earth and plant grass seed.

Spades and hoes ordinarily would have been used. This space was big enough to make the job look pretty arduous if done in the usual way, but yet so small that a horse would have looked its scorn if asked to help.

Then one of the workmen, J. W. Dotson, had an idea. "Let's get a hand plow," he suggested.

"How you gonna pull it?" the others wanted to know.

"That's a secret."

But they got the plow. The picture tells the rest. Of course they took turns, and the fellow who was skinner going one way across the lot had to play horse on the way back.

CONFERENCE ON WIRE ROPE

Invitations have been issued to over 200 manufacturers and users of wire rope for the wire rope conference to be held in New York September 13 in the Engineering Societies Building. Dr. Conrad Matschoss, director Verein Deutscher Ingenieure, will tell of the studies being conducted by the German wire rope committee. A report prepared by Dr. W. A. Scoble will describe the work of the wire ropes committee of the Institution of Mechanical Engineers in Great Britain. This is the third conference on this subject within six months under the auspices of the A.S.M.E. research committee with the assistance of Engineering Foundation for the purpose of discussing the desirability of organizing a research committee in the United States to advance the knowledge of the properties and life of wire rope through a co-operative investigation.

COMPANY TO DRILL 10 WELLS

The Monnopeg Oil Co. of Winnipeg has announced plans for drilling 10 wells in the Kevin-Sunburst Field and has made location for the first well on the Dipple lease, in the proven area.

You'll know when you *try* one

THE best way to learn how vast an improvement W-K-M Petol Pipe Tongs are over old style tongs is to try them yourself.

To make this easy for you to do, W-K-M Field men have been equipped with demonstrating racks and 1¼″ Petol Tongs as shown. You can test them in your own office, without inconvenience, without obligation.

You will find that when laid over the pipe they take hold instantly, with a positive, non-crushing grip.

That they are removed from the pipe swiftly and easily.

That they rachet perfectly.

That they are light, well balanced, and easy to handle.

That they are absolutely safe, because of their single handle.

That they are fast, and should easily increase the amount of work done by a crew in a given time. Their lightness conserves the energy of workmen, instead of wearing them down the first few hours.

Make this test, if you believe that the best tools for your men are cheapest in the long run, the most economical to use; then try a few sets in the field. If they fail to do all we claim for them, if they do not satisfy your men in every respect, they may be returned for credit.

Available in all sizes from 1″ to 12″. Fitted with genuine high-speed lathe tool steel bits, and quick change bit wedges. Fully guaranteed as to materials and workmanship.

Check the accompanying coupon and have it mailed today. Or, write, wire or 'phone. Sold through all Oilfield Supply Houses.

W·K·M {PETOL} PIPE TONGS

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Gentlemen:
( ) Please have field man demonstrate W-K-M Petol Tongs to us, at no obligation on our part.
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★star of that rollicking comedy "TAKE ANYTHING" says she could use our "one man" tong to perfection

MISS AMANA LACK declares she could bring to an exciting end her noted solo career if she could just obtain the use of one of those perfectly thrilling Guiberson "one man" tongs.

Miss Amana Lack is right. A finer tong was never made. The Guiberson Tong closes and latches automatically, with one thrust, without lifting, fitting or pulling at the jaws. And it takes an unbreakable grip, detachable only by a blow on the latch. Reversed by a flip of the hand. Has only five main parts, each rugged and strong.

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GUIBERSON

BETTER BE SAFE THAN SORRY

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 70)

CASTRO COUNTY

Colorado O. & R. Co.'s No. 1 M. Slemmons, SW cor., Sec. 73, Blk. M-17, B.S.&F. Sur. ... Rig blown down.

Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur. ... S.D. 510 ft. for csg.

CHILDRESS COUNTY

C. L. Sloane et als' No. 1 B. P. Smith, Sur. 49, F. P. Knott lands ... S.D. 4,486 ft.

COCHRAN COUNTY

Continental Oil Co.'s No. 1 Slaughter-A, 330 ft. from W, 430 ft. from S lines, League 130, Carson County School land ... Drlg. 4,700 ft.

COTTLE COUNTY

Expltn. Co.'s No. 1 Richards ... 1,000,000 ft. gas 3,720-30 ft; C.O. 4,003 ft.

Explt:n. Co.'s No. 3 Matador Land & Cattle Co., C, Sec. 46, J. H. Stephens Sur. ... Drlg. 3,635 ft.

Sun Oil Co.'s No. 1 T. B. Yarborough, 485 ft. S, 2,460 ft. E, NW cor., Sec. 551, Blk. H, W.&N.W. Sur. ... Fishing tools 4,450 ft.

DONLEY COUNTY

Blue Bonnett Oil Co.'s No. 1 Ball, 1,075 ft. from N line, 985 ft. from E line, Sec. 22, Blk. E, D.&P.R.R. Sur. ... Drlg. 2,595 ft.

Marine Oil Co.'s No. 1 Sawyer, C SW, Sec. 5, Blk. G, G.C.&S.F. Sur. ... S.D. 3,510 ft.

Southland Oil Co.'s No. 1 Lewis, C SE 40 ac., Sec. 3, Blk. 29, H.&G.N.R.R. Sur. ... Drlg. 560 ft.

GRAY COUNTY

British-American Oil Co.'s No. 2 Purviance, 330 f.. N and E. SW cor. E 160 ac., Sec. 61, Blk. B-2, H.&G. N.R.R. Sur. ... Location.

Champlin Ref. and Danciger's No. 2 Cook-Faulkner, 860 ft. N, 330 ft. E, SW cor. W 120 ac. of E 200 ac., Sec. 30, Blk. B-2, H.&G.N.R.R. Sur. ... T.D. 2,875 ft; 1,500 ft. oil in hole 2,855-57 ft.

Champlin Ref. and Danciger's No. 3 Cook-Faulkner, 330 ft. S and E, NW cor. W 120 ac. of E 200 ac., Sec. 30, Blk. B-2, H.&G.N.R.R. Sur. ... Location.

Champlin Ref. Co.'s No. 2 Jackson, 330 ft. each way from SE cor., W 100 ac., Sec. 60, Blk. B-2, H.&G.N. ... Sprayed 5 bbls; T.P. 2,920 ft; T.D. 3,520 ft; drlg. 3,560 ft.

Champlin Ref. Co.'s No. 3 McLaughlin, 990 ft. from S and E lines, E½, Sec. 33, Blk. B-2 ... Drlg. 2,000 ft.

Crabtree Drlg. Co.'s No. 1 B. F. Talley, SW NE, Sec. 114, Blk. M-2, B.S.&F. Sur. ... S.D. 2,740 ft.

Danciger O. & R. Co.'s No. 1 Arnold, 330 ft. N and E, SW cor. SE, Sec. 149, Blk. 3, I.&G.N. Sur. ... Location.

Danciger O. & R. Co.'s No. 2 Beck, 330 ft. N and E, SW cor. NW, Sec. 28, Blk. B-2, H.&G.N. Sur. ... T.D. 2,845 ft; 2,600 ft. oil in hole 2,842-45 ft; 8,000,000 ft. gas; flowed 189 bbls. in 1 hr.

Danciger O. & R. Co.'s No. 1 Beck, 330 ft. from S and W, SE, Sec. 149, Blk. 3, I.&G.N. Sur. ... Location.

Danciger O. & R. Co.'s No. 3 Beck, 330 ft. S, 990 ft. E, NW, Sec. 28, Blk. B-2, H.&G.N.R.R. Sur. ... T.D. 2,790 ft; set 8¼-in. csg.

Danciger O. & R. Co.'s No. 4 Beck, 330 ft. S and W, NE cor., Sec. 28, Blk. B-2, H.&G.N. Sur. ... Drlg. 2,197 ft.

Danciger O. & R. Co.'s No. 5 Beck, 330 ft. S and E, NW cor. SW, Sec. 28, Blk. B-2, H.&G.N. Sur. ... Drlg. 2,536 ft.

Danciger O. & R. Co.'s No. 6 Beck, 330 f.. S, 990 ft. W, NE cor., Sec. 28, Blk. B-2, H.&G.N. Sur. ... Location.

Danciger O. & R. Co.'s No. 7 Beck, 330 ft. S, 1,650 ft. W, NE cor., Sec. 28, Blk. B-2, H.&G.N. Sur. ... Location.

Danciger et als' No. 11 Jackson, 830 ft. S, 1,320 ft. W, NE cor. NW, Sec. 88, Blk. B-2, H.&G.N. Sur. ... T.D. 2,906 ft; set 8¼-in. csg.

Danciger O. & R. Co.'s No. 1 McLarty, 1,220 ft. from S. 330 ft. from W, W½ NW, Sec. 10, Blk. 1, A.C.H. &B. Sur. ... Spudding.

Danciger O. & R. Co.'s No. 1 Williams, 330 ft. from N, 330 ft. from E, S½ NW ... S.D. 2,670 ft; estimated 15,000,000 ft. gas 2,610-70 ft.

Delaney and Associates Oil Co.'s No. 8 Jackson, 990 ft. S, 330 ft. E, NW cor. E½ SW, Sec. 88, Blk. B-2, H.&G.N.R.R. Sur. ... 4,000,000 ft. gas 2,470-90 ft. and 2,530 ft; drlg. 2,720 ft.

Dye & Gillette's No. 2 J. L. Noel, 330 ft. N and E, SW cor. NE, Sec. 187, Blk. 3, I.&G.N. Sur. ... Drlg. 2,420 ft.

Bob Dunlap's No. 2 Morse, 990 ft. from N, 330 ft. from W, Sec. 2, Blk. 26 ... Fishing 2,575 ft; swbd. 100 bbls. in 24 hrs; T.P. 2,476 ft.

Empire G. & F. Co.'s No. 1 Noel, C SE, Sec. 151, Blk. 3, I.&G.N.R.R. Sur. ... S.O. 3,145-50 ft; T.D. 3,333 ft; P.B. 3,200 ft; shot 80 qts. 3,140-72 ft.

Sines & Reiger's (formerly Eslick et als') No. 1 Mrs. J. A. Hopkins, NW cor. W 80 ac. of SW, Sec. 84, Blk. B-2, H.&T.C. Sur. ... S.D. 3,206 ft.

Gardner Bros. and Collins' No. 2 Saunders, 955 ft. from S, 330 ft. from E of W 68 ac. E½, J. G. Eustice Sur. ... Location.

Gulf Prod. Co.'s No. 2 Saunders, 990 ft. N and E, SW cor., Sec. 3, Blk. 1, A.C.H.&B.R.R. Sur. ... S.D. 2,621 ft; shot 170 qts. 2,544-2,596 ft; C.O; 35 bbls. oil and 15 bbls. wtr. daily.

Gulf Prod. Co.'s No. 2 Worley-A, 330 ft. N, 990 ft. W, SE SW, Sec. 36, Blk. 3, I.&G.N. Sur. ... Drlg. 1,978 ft.

Gulf Prod. Co.'s No. 3 Worley-A, 330 ft. N, 1,650 ft. W, SE SW, Sec. 36, Blk. 3, I.&G.N.R.R. Sur. ... Drlg. 1,600 ft.

Guernsey Oil Co.'s No. 1 Pope, 330 ft. from N and W lines, W½ SW, Sec. 173, Blk. 3, I.&G.N. Sur. ... Drlg. 805 ft.

Herragan Oil Co.'s No. 1 Bradford, 330 ft. from N, 990 ft. from E, Sec. 123, Blk. B-2 ... Drlg. 950 ft.

Humble O. & R. Co.'s No. 3 Jackson, 330 ft. from E line, 330 ft. from N line of E 110.5 ac., Sec. 90, Blk. B-2, H.&G.N.R.R. Sur. ... Set 12½-in. csg. 437 ft.

Humble O. & R. Co.'s No. 4 Jackson, 976 ft. N, 330 ft. E, SW cor. E 95.25 ac., Sec. 90, Blk. B-2, H.&G.N. Sur. ... Location.

Humble O. & R. Co.'s No. 1 Palmer, 330 ft. from N and E lines, of W 100 ac., Sec. 31, Blk. B-2, H.& G.N. Sur. ... Drlg. 2,277 ft.

Independent O. & G. Co.'s No. 1 Hollenbeck, 990 ft. each way from NE cor. NE, Sec. 176, Blk. 3, I.&G. N.R.R. Sur. ... 5,000,000 ft. gas from 2,428-83 ft; fishing 3,470 ft.

Magnolia Pet. Co.'s No. 1 Wright, 330 ft. S and W lines. S½ SW, Sec. 13, Blk. 3, I.&G.N. Sur. ... S.D. 2,707 ft.

Magnolia Pet. Co.'s No. 2 Wright, 820 ft. from W, 330 ft. from S of S½ SW, Sec. 13, Blk. 3, I.&G.N. Sur. ... Location.

McLain Oil Co.'s No. 1 Back, 1,000 ft. from W line, 330 ft. from N line, NW, Sec. 24, Blk. 25, H.&G.N. Sur. ... 1,000,000 ft. gas 2,105-10 ft. and estimated 3,000,000 ft. gas 2,202-08 ft; S.O. 2,565-90 ft. and 2,-714 ft; shot 100 qts. 2,565-2,339 ft; spraying 6 bbls. oil per day; S.D. 2,846 ft; C.O.

McMan O. & G. Co.'s No. 3 Jackson, 974 ft. N, 330 ft. W, SE cor. W 95.25 ac. of E 190.5 ac., Sec. 90, Blk. B-2, H.&G.N. Sur. ... Location.

McMan O. & G. Co.'s No. 4 Palmer, 899 ft. S, 330 ft. W, NE cor. of E 100 ac. of W 200 ac., Sec. 31, Blk. B-2, H.&G.N. Sur. ... Drlg. 2,625 ft; 1,000,000 ft. gas 2,-535 ft.

McMan O. & G. Co.'s No. 5 Palmer, 330 ft. S, 930 ft. W, NE cor., E 100 ac. of W 200 ac., Sec. 31, Blk. B-2, H.&G.N. Sur. ... S.D. 2,208 ft; standardizing.

McMan O. & G. Co.'s No. 6 Palmer, 330 ft. S and E of NW E 100 ac. of W 200 ac., Sec. 31, Blk. B-2, H.&G.N. Sur. ... Drlg. 2,040 ft.

McMan O. & G. Co.'s No. 3 Saunders, 1,650 ft. N, 330 ft. E, SW cor., E 80 ac. of W 148 ac. of E 296 ac. of J. G. Eustis Sur. ... S.D. 1,984 ft.

Midwest Explt:n. Co.'s No. 2-B Bowers, 1,320 ft. from N, 330 ft. from E, Sec. 93, Blk. B-2, H.&G.N.R.R. Sur. ... Location.

Mordyan O. & G. Co.'s No. 2 Davis, 330 ft. from N, 990 ft. from E, S½ NW, Sec. 8, Blk. 1 ... Drlg. 2,320 ft.

Oil Opera.ors' No. 1 Bowers, 330 ft. from N, 330 ft. E, Sec. 93, Blk. B-2, H.&G.N. Sur. ... Show oil and gas 2,400-17 ft; drlg. 2,794 f.; first gas 2,483 ft; increased at 2,500 ft., 2,544 ft. and 2,590 ft; fishing 2,794 ft.

Operators Oil Co.'s No. 1 Lovett, 330 ft. from N and W line, W½ NE, Sec. 57, Blk. B-2, H.&G.N. Sur. ... Drlg. 2,500 ft; S.G. 2,380 ft.

Operators Oil Co.'s No. 5 Cook-Faulkner, 990 ft. N, 330 ft. W, SE of W 90 ac., Sec. 30, Blk. B-2, H.&G.N. Sur. S.D. 2,748 ft.

Operators Oil Co.'s No. 6 Cook-Faulkner, 330 ft. S and E, NW cor., Sec. 30, Blk. B-2, H.&G.N.R.R. Sur. ... S.G. 2,424 ft. and 2,477 ft; S.D. 2,750 ft.

Osborn et als' No. 1 Morse, 330 ft. N and E, SW cor. S½ NE, Sec. 1, Blk. 26, H.&G.N.R.R. Sur. ... Drlg. 1,800 ft.

Panhandle Ref. Co.'s No. 3 Saunders, 330 ft. N and E, SW cor. E½ NE, Sec. 3, Blk. 1, A.C.H.&B. Sur. ... Drlg. 380 ft.

Phillips Pet. Co.'s No. 1 Eakin, 330 ft. from S, 330 ft. from W, Sec. 56, Blk. 25, H.&G.N.R.R. Sur. ... S.G. 2,245-55 ft; fishing 2,490 ft; 1,000,000 ft. gas 2,170-2,255 ft.

Phillips Pet. Co.'s No. 1 Jackson, 330 ft. each way from NE cor. NE, Sec. 58, Blk. B-2, H.&G.N.R.R. Sur. ... S.O. 2,712-22 ft; 250 ft. oil in hole; set 5-in. csg. 3,018 ft; 7,000,000 ft. gas 3,130 ft; 1,000,000 ft. gas 3,144 ft; T.D. 3,260 ft; C.O.

Phillips Pet. Co.'s No. 2-A Jackson, 425 ft. S and E, NW NE, Sec. 88, Blk. B-2, H.&G.N.R.R. Sur. ... S.D. 2,970 ft.

Phillips Pet. Co.'s No. 6 Jackson, 330 ft. from N, 990 ft. from E line, S½ NE, Sec. 88, Blk. B-2, H.&G.N. R.R. Sur. ... Rigging up.

Phillips Pet. Co.'s No. 6 Palmer, 330 ft. S and W, NE cor., Sec. 31, Blk. 2, H.&G.N.R.R. Sur. ... Drlg. 2,015 ft.

Phillips Pet. Co.'s No. 7 Palmer, 990 ft. N, 330 ft. E, SW cor. E. 183.1 ac., Sec. 31, Blk. B-2, H.&G.N. Sur. S.D. 2,680 ft.

Phillips Pet. Co.'s No. 8 Palmer, 1,650 ft. N, 330 ft. E, SW cor. E 83.1 ac., Sec. 31, Blk. B-2, H.&G.N.R.R. Sur. ... S.D. 2,764 ft.

Prairie O. & G. Co.'s No. 1 Langham, 330 ft. N and E, SW, Sec. 1, Blk. B-2, H.&G.N.R.R. Sur. ... S.D. 2,730 ft; 60,000,000 ft. gas.

Quillian et als' No. 1 Barrett, 330 ft. from N, 330 ft. from E. Sec. 131, Blk. 3, H.&G.N. Sur. ... Drlg. 1,220 ft.

Shamrock Oil Co.'s No. 1 Clayton, 150 ft. from NE cor. of S 80 ac. of W 140 ac. of E 277 ac., Sec. 50, Blk. 25, H.&G.N. Sur. ... S.D. 2,750 ft.

Sherwood et als' No. 1 Gething, 330 f.. N and W, SE cor. N½ NE, Sec. 14, Blk. A-9, H.&G.N. Sur. ... Drlg. 2,490 ft.

St. Clair Oil Co.'s No. 1 Dial, 330 ft. S and W, NE cor. SE, Sec. 10, Blk. 25, H.&G.N.R.R. Sur. ... Cellar.

St. Clair Oil Co.'s No. 1 Rowe, Sec. 32, Blk. R ... S.D. 3,490 ft; hole full wtr.

St. Clair Oil Co.'s No. 1 L. S. Stockton, SE cor., Sec. 35, W. R. Lee Sur. ... Spudded and S.D.

The Texas Corp.'s No. 12 Bowers, 330 ft. from N, 330 ft. from W, NE, Sec. 63, Blk. B-2 ... Drlg. 3,130 ft.

The Texas Corp.'s No. 3 Bruce Bull, 330 ft. from N, 330 ft. from W, Sec. 2, Blk. B-2 ... 8,000,000 ft. gas 2,340-50 ft; S.D. 2,675 ft.

The Texas Co.'s No. 3-B Chapman, 330 ft. S and E, NW cor. SE, Sec. 69, Blk. 25, H.&G.N.R.R. Sur. ... Location.

The Texas Co.'s No. 2 Comb-Worley, 330 ft. N, 2,310 ft. W, SE cor. S½, S line, Sec. 36, Blk. 3, I.&G.N. Sur. ... 5,000,000 ft. gas 2,835-50 ft. and 70,000,000 ft. gas 2,884 ft; drlg. 2,922 ft; flowing 350 bbls. per day; top pay 2,915 ft.

The Texas Co.'s No. 3 Comb-Worley, 330 ft. N and W, SE cor., Sec. 36, Blk. 3, I.&G.N. Sur. ... S.D. 2,710 ft; set 8¼-in. csg.

The Texas Co.'s No. 4 Comb-Worley, 330 ft. N, 1,736 ft. W, SE cor., Sec. 36, Blk. 3, I.&G.N. Sur. ... T.D. 2,829 ft; 17,000,000 ft gas 2,-780-2,829 ft.

The Texas Corp.'s No. 4 Cook-Faulkner, 1,973 ft. from W line, 330 ft. from N line of W 160 ac., Sec. 29, Blk. B-2, H.&G.N. Sur. ... Fishing 2,835 ft.

The Texas Co.'s No. 7 Cook-Faulkner, 330 ft. N and W, SE cor. W 200 ac., Sec. 29, Blk. B-2, H.&G.N. Sur. .. Location.

The Texas Co.'s No. 3 Shaw, 330 ft. N and E, SW of E 279 ac., Sec. 5, Blk. 1, A.C.H.&B. Sur. ... T.D. 2,600 ft; S.G. 2,375-2,400 ft.

The Texas Co.'s No. 6 Williams, 330 ft. S and E, NW cor. NE, Sec. 6, Blk. 1, A.C.H.&B. Sur. ... Drlg. 2,380 ft; S.G. 2,360 ft.

White Eagle O. & R. Co.'s No. 1 Faulkner, 330 ft. each way from SE cor., E 60 ac., Sec. 29, Blk. B-2, H. &G.N. Sur. ... S.D. 2,735 ft; 50,000,000 ft. gas 2,-717-35 ft.

P. A. Thorpe's No. 1 Finley, 3,416 ft. from S, 330 ft. from W, of B. F. Chaney Sur. ... Drlg. 2,312 ft.

Wilcox-Pampa Oil Co.'s No. 9 Combs-Worley, 330 ft. S and E, NW cor. NE SW, Sec. 35, Blk. 3, I.&G.N. R.R. Sur. ... Estimated 15,000,000 ft. gas 2,575-2,625 ft; drlg. 2,806 ft; spraying 30 bbls. daily.

White Eagle O. & R. Co. et als' No. 2 Faulkner, 330 ft. from S and W, E 60 ac., Sec. 29, Blk. B-2 ... Drlg. 1,888 ft.

Wright Wilson, trustee's No. 1 Chapman, 175 ft. from S and E line, N½ NW, Sec. 69, Blk. 25, H.&G.N. Sur. Location.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood, 320 ft. from N and W lines, League 7, Wilbarger County School lands; elevation 3,363 ft; contract depth 5,000 ft. ... S.D. 3,224 ft.

HUTCHINSON COUNTY

Amarillo Oil Co.'s No. 2 Ingerton-A, 1,650 f.. from N line, 1,071 ft. from E line, Sec. 41, H.&T.C.R.R. Sur. 50,000,000 ft. gas 1,300 ft; gas 3,-990 ft; T.D. 4,145 ft; P.B. 3,835 ft; shot 190 qts. 3,785-3,835 ft; C.O.; to shoot 3,136-54 ft; testing.

Alamosa Oil Co.'s No. 4 Sanford, 310 ft. S, 320 ft. W, NE cor. of N 160 ac. of S 240 ac., Sec. 85, Blk. 46, H.&T.C. Sur. ... Drlg. 2,137 ft.

Continental Oil Co.'s No. 1-B Johnson, 330 ft. S and W, NE cor. NW, Sec. 6, Blk. 1, B.&B. Sur. ... Drlg. 1,290 ft.

Devore Oil Co.'s No. 1 Johnson Bros., 330 ft. from S and E line, NW SW, Sec. 28, Blk. Y, A.&B. Sur. ... Drlg. 1,665 ft.

Holmes et als' No. 2 Moore, 990 ft. N, 330 ft. E, SW cor. E½ SE, Sec. 125, Blk. 4, I.&G.N.R.R. Sur. ... Drlg. 1,010 ft.

Huey et als' No. 3 Smith et al, 330 ft. from N, 660 f.. from W, S 40 ac. of E 100 ac., SE, Sec. 12, Blk. Y .. S.D. 500 ft.

McMan O. & G. Co.'s No. 2 Sanford, 300 ft. from W line, 315 ft. from S line, N 274 ac., Sec. 83, Blk. 46, H. &T.C. Sur. ... T.D. 3,153 ft; T.P. 3,025-30 ft; to shoot; C.O. 3,153 ft.

Midwest Explt:n. Co.'s No. 1 Garner et al, 330 ft. N and W, SE cor. NE, Sec. 124, Blk. 4, I.&G.N. Sur. ... Rig.

Midwest Explt:n. Co.'s No. 2 Garner et al, 330 ft. N, 1,-650 ft. W, SE cor. NE, Sec. 124, Blk. 4, I.&G.N. Sur. .. Rig.

Midwest Explt:n. Co.'s No. 2 Moore, 330 ft. from S, 1,320 ft. from W, Sec. 125, Blk. 4, H.&G.N. Sur. ... Drlg. 2,760 ft.

O. B. Penney's No. 2 Johnson Bros., 330 f.. from S line, 330 ft. from W line, W½ NE, Sec. 35, Blk. Y, A. &B. Sur. ... 31,000,000 ft. gas 1,990 ft; drlg. 2,550 ft.

Pennowa Oil Co.'s No. 3 Smith, 330 ft. S and W, NE NW, Sec. 7, Blk. Y, N.&C. Sur. ... Drlg. 2,100 ft.

Phillips Pet. Co.'s No. 1 Cheatham, 427 ft. N, 330 ft. W, SE cor. SE SE, Sec. 38, Blk. Y ..... Drlg. 2,760 ft.
Phillips Pet. Co.'s No. 1 Johnson Bros., 330 ft. from N and W lines, NW, Sec. 34, Blk. Y, A.&B. Sur. ..... Pay 2,951-72 ft; initial prod. 30 bbls. oil and 5,000,000 ft. gas; S.D. 3,007 ft.
Phillips Pet. Co.'s No. 1 Johnson-Kotz, 350 ft. N, 330 ft. E, SW W½ SW, Sec. 35, Blk. Y ..... Drlg. 2,430 ft.
Phillips Pet. Co.'s No. 6 (Florence), 330 ft. each way from S and W lines, E½ ..... T.D. 2,876 ft; T.P. 2,805 ft; I.P. 70 bbls; shot 54 qts. 2,788-2,828 ft; fishing csg.
Prairie O. & G. Co.'s No. 4 Cal Merchant, 5,612 ft. S, 330 ft. E, NW, Sec. 37, Blk. 47, H.&T.C.R.R. Sur. .... S.D. 1,245 ft.
Prairie O. & G. Co.'s No. 4 Shaw, 330 f.. S, 990 ft. W, NE cor., Sec. 27, Blk. Y ..... C.O. 2,675 ft.
Skelly Oil Co.'s No. 2 Lee Bivins, 306 ft. from E, 1,242 ft. from S line, S 160 ac. of N 320 ac., Sec. 84, Blk. 46, H.&T.C.R.R. Sur. ..... Drlg. 800 ft.
Skelly Oil Co.'s No. 8 Whittenburg, 330 ft. from S, 2,230 ft. from W, Sec. 22, Jameson Sur. ..... C.O. 2,954 ft.
Sunny Jim Oil Co.'s No. 3 Pitts, 330 ft. N and W, of most southerly SE cor., Sec. 9, Blk. M-21, T.C. Sur. .. Location.
Travelers Oil Co.'s No. 2 Cockrell, 350 ft. from E and S line, Sec. 8, Blk. B-3, D.&S.E. Sur. ..... Drlg. 2,100 ft.

KING COUNTY

Huff Oil Co.'s No. 1 Martin, 1,320 f., from N line, 1,320 ft. from E line, Sec. 171, Blk. F, H.&T.C. Sur. ..... Rig.

LAMB COUNTY

Graham O. & G. Co. et als' No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ..... Drlg. 2,810 ft.

LIPSCOMB COUNTY

Brown et als' No. 1 Box T Ranch, SW NE, Sec. 612, H.&T.C. Sur. ..... S.D. 3,210 ft.
Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... S.D. 4,627 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ..... Small S.O. 1,133-40 ft; sand; S.D. 4,167 ft.

MOORE COUNTY

Amarillo Oil Co.'s No. 1 Read-A, C NW, Sec. 14, Blk. 12-12, D.&P. Sur. ..... Run, 10-in. csg. 1,975 ft.
Amarillo Oil Co.'s No. 1 Perkins-A, 330 ft. each way out of NW cor. NE, Sec. 76, Blk. 3 ..... Drlg. 1,750 ft.
Red River Gas Co.'s No. 1 J. M. Shelton, 330 ft. each way from SE cor., Sec. 52, Blk. 3, G.&M. Sur. ..... Building rig.
Dana O. & G. Co.'s No. 1 Anthony, C NW, Sec. 260, Blk. 44, H.&T.C.R.R. Sur. ..... Drlg. 2,230 ft.
Dana O. & G. Co.'s No. 1 Road-A, C NW, Sec. 14, Blk. B-12 ..... Location.
Fritch O. & G. Co.'s No. 1 Lee Bivins, C NE 40 ac. of N 160 ac., Sec. 4, Geo. Mahan Sur. ..... 2,000,000 f.. gas 1,550-65 ft; S.D. 2,180 ft.
Phillips' No. 1 Wilson, 330 ft. each way out of NW cor. S½ SE, Sec. 157, Blk. 3-T ..... 5,000,000 ft. gas 2,773-2,918 ft; 34,000,000 ft. gas 3,143-80 ft; fishing 3,232 ft.

MOTLEY COUNTY

Explin. Co.'s No. 5 Matador, C, Sec. 45, Blk. J-B, C. B.&C.N.G.R.R. Sur. ..... Drlg. 575 ft.
Explin. Co.'s No. 6 Matador, 330 ft. from N line, 330 ft. from E line, Sec. 132, Blk. M ..... S.D. 1,040 ft.
Matador Oil Corp.'s No. 1 Owen, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 580 ft.

POTTER COUNTY

Canadian River Gas Co.'s No. 1 Allison "A," 386 ft. from E line, 5,439 ft. from S line, Sec. 1, W. T. Palmer Sur. .. Location.

RANDALL COUNTY

W. A. Patterson's No. 1 Palo Duro, Sec. 60, Blk. K-14 .... S.D. 1,250 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. 5-A ..... T.D. 5,992 ft; will P.B. and shoot; S.O. 5,288-91 ft.

WHEELER COUNTY

A. R. Anderson et als' No. 1 Cuddleback, C SE NW, Sec. 18, Blk. Z-4, H.&G.N. Sur. ..... S.D. 200 ft.
Angus et als' No. 1 Linkey, C NE NW, Sec. 126, Blk. 23 .. S.D. 1,710 ft.
Byrens et als' No. 1 Johnson, SW cor. NE, Sec. 88, Blk. A-5, H.&G.N. Sur. ..... S.D. 2,920 ft.
Fain et als' No. 2 Binkley & Cain, C SE, Sec. 5, Blk. 24, H.&G.N. Sur. ..... First gas 2,324 ft; S.O. 2,430 ft; S.O. 2,630 f.; drlg. 3,255 ft.
Johnson et als' No. 1 Hicks, C NW SW, Sec. 49, Blk. 17, H.&G.N.R.R. Sur. ..... S.D. 1,790 ft; 6,000,000 ft. gas 1,-782-90 ft.
Kosmos Carbon Co.'s No. 1 Hick, C NW NW, Sec. 52, Blk. 17, H.&G.N.R.R. Sur. ..... Drlg. 1,250 ft.
Lone Star Gas Co.'s No. 3 Burcham, C NE SE, Sec. 91, Blk. 17, H.&G.N. Sur. ..... S.D. 1,260 ft.
Murchison & Fain's No. 1 Close, C NE NE, Sec. 82, Blk. 23, H.&G.N. Sur. ..... Rigging up.
Murchison & Fain's No. 1 Close, C NE, Sec. 82, Blk. 23, H.&G.N. Sur. ..... Location.
Magnolia Pet. Co.'s No. 1 Laycock, 652 ft. from W, 660 ft. from N, SE, Sec. 9, Blk. 27, H.&G.N.R.R. Sur. .... Drlg. 1,330 ft.
Shell Pet. Corp.'s No. 1 Ackley, C SE SW, Sec. 20, Blk. 24, H.&G.N. Sur. ..... Location.
Osage Dev. Co.'s No. 1 Purcell, C SE NE, Sec. 51, Blk. 17, H.&G.N. Sur. ..... T.D. 1,688 ft; U.R. 6⅝-in. csg.
The Texas Co.'s No. 2 Sewell, 660 ft. S and W, NE cor. NW, Sec. 1, Blk. 24, H.&G.N. Sur. ..... Drlg. 350 ft.
Upham Gas Co.'s No. 1 Ladd, C NE, Sec. 97, Blk. 23, H.&G.N. Sur. ..... Drlg. 1,924 ft; 4,000,000 ft. gas 1,-900-24 ft.
Upham Gas Co.'s No. 1 Shelton, C SE NE, Sec. 22, Blk. 24, H.&G.N.R.R. Sur. ..... Drlg. 1,600 ft.
Vaughn et als' No. 3 Ackley, 330 ft. from N, 330 f.. from W, Sec. 4, Blk. 27, H.&G.N. Sur. ..... 5,000,000 ft. gas 1,660-1,770 ft; S.D. 1,800 ft.
Vaughan et als' No. 4 Ackley, 330 ft. N and E, SW cor. NW, Sec. 27, H.&G.N.R.R. Sur. ..... T.D. 1,705 ft; run, 8¼-in. csg.
Vaughn et als' No. 5 Ackley, 330 ft. S and E, NW cor. NW NW, Sec. 4, Blk. 27, H.&G.N.R.R. Sur. ..... Spudding.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 69)

CRANE COUNTY

Gulf Prod. Co.'s No. 67 McElroy, 2,102 ft. S and 2,640 ft. W of NE cor., Sec. 201, Blk. F, C.C.S.D. &R.G.N.G.R.R. ..... Spudding.
Gulf Prod. Co.'s No. 68 McElroy, 771 ft. S of NE cor. on E line of their lease in Sec. 200, Blk. F, C.C. S.D.&R.G.N.G. ..... Building rig.
Gulf Prod. Co.'s No. 8 Waddell, 330 ft. N and W of SE cor., Sec. 2, Blk. B-24, School Land ..... Drlg. 595 ft.
Simms-Atlantic's No. 10-A University, 2,310 ft. S and E, Sec. 39, Blk. 30, University ..... Drlg. 1,406 ft.; top salt 1,070 ft.
Simms-Atlantic's No. 2-F University, Sec. 45, Blk. 30, 2,310 ft. from N, 330 ft. from E, University ..... Location.
Tidal Oil Co.'s No. 10 University, 859 ft. from W and 1,255 ft. from S line of SE, Sec. 47, Blk. 30, University Land ..... Rig.
T. P. Coal & Oil Co.'s No. 2 University, 2,310 ft. from S, 1,650 ft. from W, Sec. 34, Blk. 30, University Land . Location.
Church-Weekley's No .3 Dowell-University, 990 ft. from S and W, Sec. 39, Blk. 30 ..... 1,500 ft. oil in hole; top pay 2,890 ft.; fishing 3,025 ft.

CROCKETT COUNTY

California Co.'s No. 3 Powell, Lease No. 1, 1,056 ft. N and 495 ft. E of SW cor., Sec. 62, Blk. BB, G.C. &S.F. ..... Location.
Eppenaur et al's No. 2 Noelke, 500 ft. N and 1,250 ft. E of SE cor., Sec. 64, Blk. 1, I.&G.N.R.R. Sur. ..... Shut down 1,120 ft.; top salt 720 ft.
Lewis & Daniels' No. 1 Pecos River Bed, 19 yards S and 37 degrees E of NW cor., Sec. 33, Blk. 1, I.&G.N. Sur. .. Shut down 1,135 ft.
W. W. Donnelly & Young's No. 1 Shannon, SW SW SE, Sec. 42, Blk. BB, T.C.R.R. Sur. ..... Drlg. 2,250 ft.
W. W. Donnelly & Young's No. 1 Middlebuster, C Sec. 11, Blk. 9, D.&S.E. Sur. ..... 7,000,000 ft. gas at 1,663 ft.; shut down 1,755 ft.
Moncrief's No. 3 Todd, 330 ft. from S and E, Sec. 29, Blk. VV ..... Rigging up.
Taylor-Link's No. 3 Powell, 1,000 ft. S of No. 2, Sec. 52, Blk. BB, E.L.&R.R. Sur. ..... Fishing 2,285 ft.

CULBERSON COUNTY

Deep Rock Oil Co.'s No. 3 Kloh, 360 ft. N and 1,388 ft. W, Sec. 39, Blk. 59 ..... Shut down 1,602 ft.
Hickey & Silver's No. 1 C. O. Finley, 600 ft. N and 1,980 ft. W, Sec. 20, Blk. 82 ..... Small show oil 1,331 ft.; shut down 2,260 ft.; hole full water; elev. 3,874 ft.; shut down for 30 days.
West Coast Oil & Exploration Co.'s No. 1 McGregor, C NW, Sec. 14, Blk. 81 ..... Total depth 720 ft.; straightening crooked hole; drlg. out cement.
Scott & Dittman's No. 1 Miller, 1,160 ft. N and 2,480 ft. E, Sec. 1, Blk. 97, Public School Land ..... Rainbow 1,056 ft.; 300 ft. sulphur water 1,725 ft.; oil show 2,528 ft.; hole full sulphur water; shut down 2,886 ft.; running 6-in. casing.

ECTOR COUNTY

Anderson's No. 1 fee, 1,320 ft. E along N line, Sec. 19, and 150 ft. N at right angles with line, Sec. 18, Blk. B-16, Public School Land ..... Moving in material.
R. R. Penn et al's No. 1 Kloh-Rumsey, 330 ft. N and 2,640 ft. E of SW, Sec. 7, Blk. 44, Twp. 3s, T.&P. R.R. Sur. ..... Top salt 1,230 ft.; drlg. 1,235 ft.

EL PASO COUNTY

Laytex' No. 1 Malone, 2,200 ft. SW and NW Sec. 46, J. M. Day Sur. ..... Shut down 1,107 ft.; running 10-in. casing; froze; trying to free.

EDWARDS COUNTY

A. M. Griffith's No. 1 Wardlow, Sec. 60, V-8, J. C. Clift Sur. ..... Shut down 3,000 ft.

FISHER COUNTY

Bickerstaff et al's No. 1 McWhirter, 2,640 ft. E and 150 ft. N of SW cor. of Sec. 295, Blk. 2, H.&T.C. Sur. .... Shut down 2,000 ft. for orders.
Cranfill & Reynolds' No. 1 Texas Cement, Sec. 10, 330 ft. from N and W of most westerly NW cor. ..... Drlg. 1,280 ft.
Magnolia Pet. Co.'s No. 1 Lee, Sec. 357, 2,310 ft. from N and 4,286 ft. from W ..... Shut down 2,625 ft.
Mesa Oil Co.'s No. 1 Griffin, 849 ft. N and 465 ft. E of NE cor. Sec. 20, School Land ..... Cleaning out 3,270 ft.
Midwest Oil Co.'s No. 1 Steele, 660 ft. from S, 440 ft. from W, Sec. 210, Blk. I ..... Drlg. 1,065 ft.
H. Riley's No. 1 J. H. Veatch, 250 ft. S and 990 ft. E of NW cor., Sec. 4, English Sur. ..... Drlg. 1,200 ft.
Roeser & Pendleton's No. 1 Johnson, 330 ft. from N, 3,870 ft. from W, Sec. 71, Blk. 1, H.&T.C. ..... Drlg. 2,660 ft.
The Texas Company's No. 1-B Stephens, 330 ft. from N and W of S half SW, Sec. 79, Blk. 1, H.&T.C.R.R. Sur. ..... Drlg. 2,130 ft.

GARZA COUNTY

Bell Thompson's No. 1 Tuffing, 330 ft. from S, 2,310 ft. from E, Sec. 10, Blk. 6, H.&G.N. ..... Spudded and shut down 550 ft.
Emerald Oil Co.'s No. 1 J. C. Bargsley, 2,310 ft. from E and 330 ft. N of SW cor. Sec. 135, Blk. 5, H.&G.N.. Total depth 2,551 ft.; estimated 60 bbls. per day after shot.
Gulf Prod. Co.'s No. 1 Street, C Sec. 7, Blk. 8, H.&G.N. R.R. Sur. ..... Shut down 3,950 ft.
Paul Steed et al's No. 1 Boren, Sec. 136, Blk. 5, 330 ft. from N, 990 ft. from E, H.&G.N.R.R. Sur. ..... Drlg. 1,000 ft.

GLASSCOCK COUNTY

The California Co.'s No. 3 Currie, 990 ft. S and 2,310 ft. W of NE cor., Sec. 219, Blk. 29, W.&N.W.R.R. Sur. .. Drlg. 900 ft.
California Co.'s No. 1 Jones, 330 ft. S from N and E lines, Sec. 25, Blk. 33, Twp. 2s, T.P. Sur. ..... Location.
Chas. Daniel et al's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor, Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur.. Shut down 500 ft.
Gibson-Johnson's No. 1 Dean, 1,320 ft. S and E of NW cor. Sec. 2, Blk. 33, Twp. 2s, T.P.R.R. Sur. ..... Top salt 1,075 ft.; top lime 2,560 ft.; drlg. 3,540 ft.
Houston Oil Co.'s No. 1 McDowell, 330 ft. from N and 2,310 ft. from E, Sec. 30, Blk. 33, Twp. 2s ..... Shut down 2,603 ft.
Kirby Pet. Co.'s No. 1 Baker, 330 ft. from N and W lines of Sec. 23, Blk. 33, Twp. 2s, T.P. Sur. ..... Location.
Kirby Pet. Co.'s No. 1 Phillips, Sec. 23, Blk. 33, Twp. 2s, 330 ft. from N and 2,310 ft. from W ..... Top pay 2,212 ft.; 1,200 ft. fluid in hole; shut down 2,268 ft.; fishing pipe; hole full oil.
Kirby Pet. Co.'s No. 2 Phillip, 330 ft. from N and W, Sec. 23, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Location.
Landreth et al's No. 1 Huston, Sec. 29, Blk. 35, Twp. 2s, 330 ft. from S, 2,310 ft. from E, T.&P. Sur. ..... Location.
Lion Oil & Ref. Co.'s No. 1 Coffee, 330 ft. from N and E, Sec. 22, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Total depth 2,240 ft.; estimated good for 400 bbls. daily.
Midwest Oil Co.'s No. 1 Edwards, 330 ft. from S, 2,259 ft. from E, Sec. 20, Blk. 34, T.&P.R.R. Sur. ..... Fishing 2,755 ft.
Penn Oil Co.'s No. 1 Schaffer, 1,320 ft. from S, 2,640 ft. from E, Sec. 4, Blk. 32, Twp. 3s, T.P.R.R. Sur. ..... Top lime 2,305 ft.; drlg. 2,350 ft.
Schermerhorn Oil Co.'s No. 1 Phillips, Sec. 23, Blk. 33, Twp. 2s, T.&P.R.R. Sur., 330 ft. N, 2,310 ft. E ..... Drlg. 1,650 ft.
E. L. Smith's No. 1 Coffee, 330 ft. from S and E of Sec. 15, Blk. 33, Twp. 2s, T.&P. Sur. ..... Location.
Sun Oil Co.'s No. 1 Phillips, Sec. 14, Blk. 33, Twp. 2s, 330 ft. from S, 2,310 ft. from W ..... Drlg. 845 ft.
Sun Oil Co.'s No. 2 Phillips, 330 ft. from S and W lines, Sec. 14, Blk. 33, Twp. 2s, T.P. Sur. ..... Location.
Texas State Oil Co.'s No. 1 Coffey, 330 ft. from S and 990 ft. from E, Sec. 19, Blk. 34, Twp. 2s ..... Shut down 2,461 ft.
World Oil Co.'s No. 2-C McDowell, Sec. 21, Blk. 34, Twp. 2s, 330 ft. S and 2,310 ft. E of NW cor. ..... Rig up; setting engine.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Elwood, 320 ft. from N and W line, League 7, Wilbarger County School Land ..... Shut down 3,234 ft.

HOWARD COUNTY

Amerada Pet. Corp.'s No. 12 Roberts, 660 ft. from S, 1,022 ft. from E, Sec. 128, Blk. 29 ..... Drlg. 1,280 ft.
California Co.'s No. 3 Roberts Lease No. 1, Sec. 137, Blk. 29, 1,654 ft. from S, 990 ft. from E, W.&N.W.R.R. Sur. ..... Drlg. 1,720 ft.
Continental Oil Co.'s No. 5-C Chalk, 1,140 ft. from N and 2,440 ft. from E, Sec. 140, Blk. 29, W.&N.W. R.R. Sur. ..... Location.
Continental Oil Co.'s No. 6-C Chalk, 1,520 ft. from N and 2,440 ft. from E, Sec. 140, Blk. 29, W.&N.W. R.R. Sur. ..... Location.
Continental Oil Co.'s No. 6-E Chalk, 990 ft. N and 1,650 ft. E of SW cor., Sec. 124, Blk. 29, W.&N.W. R.R. Sur. ..... Location.

Continental Oil Co.'s No. 1 Kloh-Rumsey, 2,310 ft. S, 330 ft. W of NE cor. Sec. 13, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Location.
Continental Oil Co.'s No. 2 Kloh-Rumsey, 1,650 ft. S and 330 ft. W of NE cor. Sec. 13, Blk. 33, Twp. 2s, T.&P. Sur. ..... Location.
Continental Oil Co.'s No. 3 Kloh-Rumsey, 990 ft. S and 330 ft. W NE cor., Sec. 13, Blk. 33, Twp. 2s, T.&P. R.R. Sur. ..... Location.
Continental Oil Co.'s No. 9-A Settles, 220 ft. from N, 660 ft. from E, Sec. 135, Blk. 29, W.&N.W.R.R. Sur. ..... Location.
Godley Pet. Co.'s No. 16 Hooks, 1,520 ft. from N, 2,440 ft. from W, Sec. 140, Blk. 29, W.&N.W.R.R. Sur. ..... Drlg. 1,200 ft.
Gulf Prod. Co.'s No. 7 Clay, 330 ft. S and 990 ft. W of NE cor. W half, Sec. 155, Blk. 29, W.&N.W.R.R. Sur... Top pay 1,832 ft.; total depth 1,863 ft.; shot 60 qts. from 1,830-61 ft.; swabbed 160 bbls. before shot; 1,000 ft. oil in hole after shot.
Group No. 1 & Continental Oil Co.'s No. 7-A Settles, 1,650 ft. N and 2,310 ft. W of SE cor. Sec. 135, Blk. 29, W.&N.W.R.R. Sur. ..... Rig.
Group No. 1 & Continental Oil Co.'s No. 8-A Settles, 990 ft. N and 2,310 ft. W of SE cor. Sec. 135, Blk. 29, W.&N.W.R.R. Sur. ..... Rig.
Group No. 1 Oil Co. and Continental Oil Co.'s No. 9 Settles-A, 200 ft. S and 660 ft. W NE cor., Sec. 135, Blk. 29, W.&N.W. ..... Location.
Howard Oil Corp.'s No. 3 Abrams, 990 ft. from N and 330 ft. from W of Sec. 5, Blk. 32, Twp. 2s, T.&P. R.R. Sur. ..... Top pay 2,250 ft.; shut down 2,280 ft.
Humble Oil & Ref. Co.'s No. 4 Clay, 1,650 ft. from W, 330 ft. from S. Sec. 138, Blk. 29, W.&N.W.R.R. ..... Drlg. 1,820 ft.
Laurel Oil & Cosden Oil Co.'s No. 14 Roberts, 1,600 ft. N and 330 ft. W of SE cor., Sec. 136, Blk. 29, W.&N.W.R.R. Sur. ..... Location.
Magnolia Pet. Co.'s No. 13 Dora Roberts, 2,440 ft. N and 1,650 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. ..... Shut down 2,927 ft.; set 8¼-in. casing.
Marland Prod. Co.'s No. 3 Clay-F, 250 ft. S and 660 ft. W of NE cor., Sec. 138, Blk. 129, W.&N.W.R.R. Sur... Shut down 2,675 ft. with show oil 2,595-2,675 ft.
McGinley et al's No. 2 Hyman, Sec. 92, Blk. 29, W.& N.W.R.R. Sur. ..... Top pay 1,327-28 ft.; total depth 1,745 ft.; pumped 36 bbls. in 4½ hrs.
Merriwether's No. 1 Smith, 150 ft. from S. 2,490 ft. from W, Sec. 45, Blk. 33 ..... Shut down 425 ft.
Merrick & Bristow's No. 11 Hooks, Sec. 140, Blk. 29, 625 ft. from N, 2,015 ft. from W ..... Top pay 1,841-68 ft.; total depth 1,947 ft.; 1,000 ft. oil in hole.
Merrick & Bristow's No. 12 Hooks, 1,120 ft. from N and 2,440 ft. from W, Sec. 140, Blk. 29 ..... Shut down 1,787 ft.
Merrick-Bristow's No. 9 Roberts, 1,155 ft. from S, 220 ft. from W, Sec. 137, Blk. 29, W.&N.W.R.R. Sur. ..... Shut down 1,398 ft.
Merrick & Lamb's No. 9 Clay, 660 ft. from S and 360 ft. from E, Sec. 126, Blk. 29 ..... Shut down 1,900 ft.; show oil 1,745-60 ft.
Moody Oil Co.'s No. 16-B Roberts, 990 ft. from N, 330 ft. from W, Sec. 137, Blk. 29, T.&P. ..... Top pay 1,325 ft.; total depth 1,417 ft.; initial production 30 bbls. in 6 hrs.
Moody Oil Co.'s No. 18-B Roberts, 280 ft. S and 2,280 ft. E NW cor. Sec. 137, Blk. 29, W.&N.W.R.R. ..... Location.
Moody Oil Co.'s No. 19-B Roberts, Sec. 137, Blk. 29, 1,040 ft. from N, 2,310 ft. from W ..... Shut down 250 ft.
Moody Oil Co.'s No. 20-B Roberts, 1,750 ft. from N and 2,310 ft. from W, Sec. 137, Blk. 29 ..... Drlg. 690 ft.
Moody Oil Corp.'s No. 21-B Roberts, Sec. 137, Blk. 29, 2,310 ft. from N and 990 ft. from W. W.&N.W. Sur. .. Shut down 1,325 ft.
Moody Oil Co.'s No. 22-B Roberts, 2,310 ft. from N and 1,610 ft. from W, Sec. 137, Blk. 29 ..... Top pay 1,311 ft. ;total depth 1,399 ft.; to test.
Moody Oil Co.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 ..... Shut down 261 ft.
Moody Oil Co.'s No. 19-E Roberts, 190 ft. from N and 2,310 ft. from E, Sec. 136, Blk. 29 ..... Cellar.
Moody Oil Corp.'s No. 20-E Roberts, 1,650 ft. S, 2,310 ft. W of NE Sec. 136, Blk. 29 ,W.&N.W.R.R. Sur. ..... Location; elevation 2,787 ft.
Owen & Sloan's No. 14 Roberts, 1,600 ft. from S. 330 ft. from E, Sec. 136, Blk. 29, W.&N.W. ..... Location.
Plymouth Oil Co.'s No. 4 Abrams, 330 ft. from N and 1,650 ft. from W, Sec. 5, Blk. 32, Twp. 2s ..... Top pay 2,480 ft.; total depth 2,910 ft.; 1,600 ft. oil in hole.
Plymouth Oil Co.'s No. 5 Abrams, Sec. 5, Blk. 32, Twp. 2s, 1,650 ft. from N, 330 ft. from W, T.&P. .... Drlg. 400 ft.
Pure Oil Co.'s No. 2 Scrivner, 330 ft. from S and 1,650 ft. from W, Sec. 4, Blk. 32, Twp. 2s, T.&P.R.R. Sur... Location.
Shell Pet. Corp.'s No. 1-B Settles, 1,650 ft. from S. 2,310 ft. from W, Sec. 135, Blk. 29, W.&N.W.R.R. Sur.... Drlg. 2,373 ft.; show oil 2,300 ft.
Shell Pet. Corp.'s No. 1 Kloh-Rumsey, 2,310 ft. from S and 330 ft. from E, Sec. 13, Blk. 33, Twp. 2s, T.&P. R.R. Sur. ..... Shut down 2,030 ft.
Shell Pet. Corp.'s No. 2-A Roberts, 1,320 ft. from N, 1,650 ft. from W, Sec. 156, Blk. 29, W.&N.W.R.R. Sur. ..... Drlg. 2,375 ft.
Simms Oil Co.'s No. 1 Clay, 330 ft. from S, 2,310 ft. from W, Sec. 127, Blk. 29 ..... Drlg. 1,725 ft.; show oil 1,595-1,625 ft.
Sprague Oil Co.'s No. 3 Roberts, 990 ft. from N and 330 ft. from W, Sec. 156, Blk. 29, W.&N.W.R.R. Sur. ..... Location.
Ward Oil Co.'s No. 9 Roberts, 1,485 ft. from S, 220 ft. from W line of Sec. 137, Blk. 29, W.&N.W.R.R. Sur... Shut down 1,350 ft.
Ward Oil Co.'s No. 10 Roberts, 1,485 ft. from S and 640 ft. from W line, Sec. 137, Blk. 29, W.&N.W.R.R. Sur... Drlg. 1,115 ft.
Ward Oil Co.'s No. 11 Roberts, 2,430 ft. from S, 760 ft. from W line of Sec. 137, Blk. 29, W.&N.W. ..... Drlg. 970 ft.
Witherspoon's No. 3 Abrams, 920 ft. S, 723 ft. E, Sec. 3, Blk. 32 ..... Drlg. 1,300 ft.

HUDSPETH COUNTY

California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor., Sec. 19, Blk. E ..... Total depth 1,640 ft.; straight-reaming.
George Richardson's No. 1 Faxton, 2,640 ft. from N and W. Sec. 9, Blk. 16 ..... Drlg. 205 ft.
Western States Oil Co.'s No. 1 Moore, C SE Sec. 16, Blk. 71, Twp. 6, T.&P. Sur. ..... Shut down 2,685 ft.; fishing job.
Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW, Sec. 12, Blk. 18 ..... Shut down 3,140 ft.; fishing.

IRION COUNTY

Brown & Fox's No. 2 Tankersley, 160 ft. from N and 500 ft. from E lines of S half of Sec. 712, F. Willig Sur. ..... Location.
Crawford Oil Co.'s No. 1 Williams, 450 ft. from N, 150 ft. from W, Subd. 8 ..... Shut down 770 ft.
Carl Cromwell's No. 1 Nutt, 150 ft. from N, 1,160 ft. from W, Subd. 6, Gonzales County School Land .... Location.
Carl Cromwell's No. 1 Tankersley, 2,490 ft. from S and E, Sec. 1,219, T.C.R.R. Sur. ..... Rigging up.
Fuhrman Pet. Co.'s No. 1 Nutt, 150 ft. from N and W, Subd. 4 ..... Location.
Kimbrough & Flinchbaugh's No. 1 Tankersley, 160 ft. S and 200 ft. W of NE cor. S half, Sec. 712, Ford Willig Sur. ..... Show oil 1,318-29 ft.; total depth 1,335 ft.; averaging 60 bbls. daily 37 degrees gravity oil; shut down for storage.
Pecos Valley Oil Co.'s No. 2 Stocks, Sec. 19, Blk. 3, 1,020 ft. from S and W, H.&T.C. Sur. ..... Fishing 1,202 ft.
Webb's No. 2 Nutt, 200 ft. from N and 711 ft. from E, Subd. 5 ..... Top pay 1,359 ft.; total depth 1,539 ft.; pumping 3 bbls. per hour.
Kingwood Oil Co. et al's No. 1 J. D. Suggs, SE NW SE Sec. 19, Blk. 7, E.&T.C. Sur. ..... Show gas 7,656 ft.; drlg. 7,686 ft.
P. H. Williams' No. 1 Ash, C of Sec. 20, Washington County ..... Cleaning out 3,535 ft.

JEFF DAVIS COUNTY

J. K. Hughes Dev. Co.'s No. 2 Means, 1,622 ft. N line, 600 ft. W line, Sec. 345, H.&T.C. Sur. ..... Show gas 3,271 ft.; fresh water 3,000-05 ft.; underreaming 5 3/16-in. casing; shut down 4,008 ft.; 600 ft. fresh water 4,000-26 ft.

JONES COUNTY

J. H. Adsit et al's No. 1 Swenson, C of NE of SE, Sec. 193, B.B.B.&C. Sur. ..... Drlg. 1,240 ft.
Cosden-Herbert et al's No. 3 Bickley, 330 ft. N and W of SE cor. of S half NW, Sec. 50, Blk. 18 ..... Rig.
W. G. Clark et al's No. 1 Collins, 330 ft. S and E of NW cor., Sec. 29, Blk. 18, T.&P.R.R. Sur. ..... Underreaming 8-in. casing 2,308 ft.
Humble Oil & Ref. Co.'s No. 2 Bickley, 330 ft. S and W of NE cor. of SW, Sec. 50, Blk. 18, T.&P.R.R. Sur. ..... Top lime 2,437 ft.; total depth 2,468 ft.; made 64 bbls. first 24 hrs.
McNeeley et al's No. 1 Roscoe Bland, 1,175 ft. N and 240 ft. W of SE cor., Subd. 20, A-164, DeWitt Co. School Land ..... Spudded and shut down.
Sedgwick Oil & Gas Co.'s No. 1 Brown, 660 ft. N and 1,320 ft. E of SW cor., Sec. 9, Blk. 1, T.&N.O. Sur. ... Drlg. 740 ft.
Texas Pacific Coal & Oil Co.'s No. 1 Smith, 1,822 ft. S and 2,043 ft. E of SW cor. Sec. 51, Blk. 18, T.&P. Top lime 2,499 ft.; top pay 2,480-85 ft.; swabbed 6 bbls. per hr.; drlg. 2,940 ft.
The Texas Company's No. 3 Camp, 1,189 ft. S and 326 ft. W of NE cor. of Sec. 13, Blk. 19, T.&P. ..... Underreaming 5-in. casing at 2,860 ft.; drlg. 2,950 ft.

KIMBLE COUNTY

C. L. Bryant et al's No. 1 Lambert, 700 ft. from N and W line of F. Lotta Sur. ..... Shut down 703 ft.
Lindsay Bros.' No. 1 Anderson, Sec. 167, 1,320 ft. from N and E ..... Shut down 990 ft.
McLean & Jamison's No. 1 Cannon, 1,940 ft. N and 300 ft. W of SE cor. Robert Cochran Sur. ..... Shut down 1,280 ft.

LOVING COUNTY

Humble Oil & Ref. Co.'s No. 1 Kloh, 2,640 ft. N and W Sec. 35, Blk. 55, Twp. 2, T.&P.R.R. Sur. ..... Rigging up standard.
Lockhart Co.'s No. 3 Allen, 330 ft. from NE, 1,650 ft. from NW, Sec. 82, Blk. 33, H.&T.C. ..... Location.
Lockhart & Co.'s No. 3 Hubbard, 330 ft. from NE and SE, Sec. 83, Blk. 33, H.&T.C. ..... Drlg. 210 ft.
Lockhart & Co.'s No. 4 Hubbard, 1,660 ft. NE, 330 ft. NW, Sec. 83, Blk. 33, H.&T.C. ..... Rigging up standard tools.
Lockhart & Co.'s No. 1 Hayzell, 2,792 ft. SW of NE line and 660 ft. NW of SE line, Sec. 84, Blk. 33, H.&T.C. R.R. Sur. ..... Top salt 700 ft.; fishing by 12-in bit; total depth 3,980 ft.
Lockhart & Co.'s No. 1-H Wheat, 990 ft. NE and SE Sec. 85, Blk. 33, H.&T.C. ..... Total depth 3,197 ft.; plugged back 1,180 ft.; spraying 10 bbls. oil; cleaning out.

LYNN COUNTY

Lubewell Oil Co.'s No. 1 May, 2,310 ft. S, 2,310 ft. W, Sec. 10, Blk. 7, E.L.R.R. ..... Shut down 100 ft.
George McCamey's No. 1 Edwards, 165 ft. N and E, Sec. 5, Blk. 2, L.S.&W. Sur. ..... Top salt 2,140 ft.; oil show 1,580-90 ft.; cem. 8-in. casing 2,500 ft.; shut down 4,500 ft.

MENARD COUNTY

J. C. Barnett's No. 2 Callan, Sec. 1, 1,050 ft. from S, 1,190 ft. W ..... Drlg. 290 ft.
Cromwell & Duffey's No. 1 Winslow, C SE, Sec. 32, T.&N.O. Sur. ..... Show oil in lime 2,390 ft.; underreaming 6-in. casing 2,765 ft.; drlg. 2,990 ft.

MITCHELL COUNTY

Seiger's No. 1 Scott, C of NE of SW, Sec. 36, Blk. 17, S.P.R.R. Sur. ..... Shut down 730 ft.
Tens & Wheeler's No. 1 Radford, 1,320 ft. N and W of Sec. 1, Blk. 27, T.&P. Sur. ..... Running 6⅝-in. casing; total depth 4,154 ft.

NOLAN COUNTY

Phillips Pet. Co.'s No. 1 Plunkett, 330 ft. N and W of SE cor. NW, Sec. 66, Blk. 23, T.&P. Sur. ..... Total depth 3,600 ft.; underreaming 8¼-in casing.

PECOS COUNTY

Continental Oil Co.'s No. 1-A University, 1,320 ft. from N and W of Sec. 6, Blk. 17 ..... Location.
Henshaw et al's No. 1 University, 330 ft. from N and W of NE, Sec. 13, Blk. 18 ..... Location.
Henshaw et al's No. 2 University, 330 ft. from N and E lines of NW of NE of Sec. 13, Blk. 18 ..... Location.
Henshaw et al's No. 3 University, 330 ft. from S and E of NW of NE of Sec. 13, Blk. 18 ..... Location.
Henshaw et al's No. 4 University, 330 ft. from S and W of NW of NE of Sec. 13, Blk. 18 ..... Location.
Moncrief et al's No. 2 University, 330 ft. from S and E of NE of NW of Sec. 13, Blk. 18 ..... Location.
M. M. Rowan's No. 1 University, C NE of Sec. 25, Blk. 16, University Land ..... Drlg. 560 ft.
California Co.'s No. 5 Smith, Lease No. 1, 330 ft. from N, 2,405 ft. from W, Sec. 21, Blk. 194, G.C.&S.F. .... Rig.
California Co.'s No. 8 Smith, Lease No. 1, 330 ft. from S and 3,097 ft. from W, Sec. 23, Blk. 194, G.C.&S.F... Drlg. 675 ft.
California Co.'s No. 19 Yates, Lease No. 1, Sec. 34, Blk. 194, 1,042 ft. from N and 1,919 ft. from E, G.C. &S.F. ..... Drlg. 1,084 ft.
California Co.'s No. 20 Yates, Lease No. 1, 1,042 ft. from N, 2,591 ft. from W, Sec. 34, Blk. 194, G.C. &S.F. ..... Shut down 1,124 ft.
California Co.'s No. 1 University-Landrum, Sec. 12, Blk. 18, 330 ft. from S. 1,965 ft. from E. University Land.. Rigging up.
Cosby's No. 2 Smith, Sec. 24, Blk. 194, 1,650 ft. from N, 330 ft. from E. G.C.&S.F.R.R. Sur. ..... 1,000 ft. oil in hole; total depth 1,400 ft.; top pay 1,255 ft.; drlg. 1,575 ft.
Cowboy Evans' No. 1 Pecos Valley, 2,310 ft. from NW line, 990 ft. from SW line of Sec. 36, Blk. 3, H.&T.C. R.R. Sur. ..... Top salt 1,215 ft.; total depth 1,562 ft.; top pay 1,556 ft.; flowed 10 bbls. after standing 4 hrs.
Crowey's No. 1 Heiner, 2,400 ft. each way from N and E lines, Sec. 559, G.C.&S.F.R.R. Sur. ..... Shut down 1,300 ft.
Clayton Williams' No. 1 Sanford, 160 ft. from NW line, 1,160 ft. from SW line, Sec. 55, Blk. 10, H.&G.N. .... Show oil 1,390 ft.; shut down 1,526 ft.
Gibson-Johnson's No. 1 Grace, 330 ft. N, 990 ft. from E, Sec. 3, Blk. 179 ..... Total depth 1,793 ft.; skidding rig.
Gulf Prod. Co.'s No. 20-B Smith, Sec. 22, Blk. 194, 330 ft. from N, 2,322 ft. from E, G.C.&S.F. ..... Spudding.
Gulf Prod. Co.'s No. 25 Yates, 1,015 ft. N and 3,983 ft. E of SW cor., R. C. School Land ..... Location.

Gulf Prod. Co.'s No. 25 Yates, Sec. 3, Runnels County School Land, 1,015 ft. from S and 8,083 ft. from W.. Location.
Humble O. & R. Co.'s No. 11 M. A. Smith, 330 ft. from S and 2,150 ft. from E of Sec. 36, Blk. 194, G.C. &S.F. ..... Location.
Jayhawk Oil Co.'s No. 1 Price, 1,310 ft. from W, 330 ft. from S, Sec. 6, Blk. 12, H.&G.N.R.R. Sur. ..... Drlg. 100 ft.
J. L. Kennedy's No. 1 Roberts, C of Sec. 78, Blk. 3, T.&P.R.R. Sur. ..... Machine.
Sam Kitts et al's No. 1 Sherbino, 330 ft. from N and 990 ft. from W line, Sec. 52, Blk. C-4, G.C.&S.F.R.R.. Shut down 1,010 ft.; top salt 975 ft.
Landreth's Prod. Co.'s No. 1 University, 330 ft. from N and W lines of E half of SE, Sec. 13, Blk. 18, University Land ..... Shut down 950 ft.; estimated 66,000,000 ft. gas at 960 ft.; rig burned; shut in.
Seminole Oil Co.'s No. 1 Pecos Valley, Sec. 22, Blk. 10, 360 ft. from SW, 2,280 ft. from SE, H.&G.N. Sur. .... Location.
Marland Oil Co.'s No. 1 University, Sec. 10, Blk. 17, 1,620 ft. from N, 1,020 ft. from E ..... Top salt 950 ft.; 2,000,000 ft. gas 1,600-08 ft.; show oil 1,528 ft.; shut down 1,833 ft.
Mauch & Kroger's No. 1 Holmes, Sec. 5, Blk. 178, T.C. Sur. ..... Shut down 1,442 ft.
McMan Oil & Gas Co.'s No. 3 Richardson, Sec. 108, 370 ft. N, 800 ft. W of SW cor., Runnels County School Land ..... Shut down 1,374 ft.
R. E. Moore's No. 1 Arnold, 1,320 ft. from S and 660 ft. from E lines of Sec. 18, Blk. 1, H.&T.C.R.R. ..... Shut down 958 ft.; to run casing.
Moncrief's No. 1 Clarkson, Sec. 84, Blk. 11, H.&T.N.R.R. Sur., 2,310 ft. from N and W ..... Location.
Moncrief et al's No. 1 Tippett, 330 ft. from S, 330 ft. E of C, Sec. 36, Blk. 12, H.&G.N. ..... Location.
Moncrief et al's No. 1 Toborg, 330 ft. from S, 330 ft. W of C of Sec. 539, Blk. 1 ..... Show oil in sand 320 ft.; shut down 370 ft.; flowed 64 bbls. in 72 hrs.
Moncrief et al's No. 1 University, 1,470 ft. from N and 150 ft. from E, Sec. 27, Blk. 18, University Land .... Drlg. 1,672 ft.
Moncrief et al's No. 2 University, 330 ft. from N, 2,310 ft. from W line of Sec. 13, Blk. 18, University Land.. 20,000,000 ft. gas; total depth 1,715 ft.; shot 80 qts. 1,643-84 ft.; flowed 32 bbls. oil first 15 hrs.
Mid-Kansas Oil & Gas Co.'s No. 7 Smith, 330 ft. N and 227 ft. E of NW cor., Sec. 21, Blk. 194, G.C.&S.F. ... Location.
Mid-Kansas Oil & Gas Co.'s No. 31 Yates, 280 ft. W, 1,355 ft. S of NW cor., Sec. 59, Blk. 1, I.&G.N. ..... Spudding.
S. B. Owen's No. 1 Masterson, 330 ft. NE of SW line and 330 ft. NW of SE of Sec. 104, Blk. 10, H.&G.N... Location.
J. D. O'Mara's No. 1 Bernett, Sec. 592, 1,460 ft. from S, 150 ft. from E, G.C.&S.F. ..... Drlg. 958 ft.
J. D. O'Mara's No. 1 Streety, C of Sec. 1, W. P. Howard Sur. ..... Drlg. 810 ft.
Pecos Crude Oil Pur. Co.'s No. 3 Pecos Valley, 990 ft. from NW, 1,650 ft. from SW, Sec. 22, Blk. 10 ..... Top salt 1,115 ft.; drlg. 1,660 ft.; top pay 1,610 ft.; 75 ft. oil in hole; show gas at 1,597 and 1,626 ft.
Perrin et al's No. 1 Eaton, 150 ft. each way from NE and NW lines, Sec. 27, Blk. 39, H.&T.C. Sur. ..... 18,000,000 ft. gas 1,490-1,502 ft.; spraying salt water from behind 8-in. casing set at 1,180 ft.; shut down 1,502 ft.; 5 3/16-in. casing set on bottom with last joint perforated; 18,000,000 ft. gas shut in.
Perren's No. 1 Peterson, 150 ft. from NW, 150 ft. from SW, Sec. 34, Blk. 10, H.&T.C. ..... Shut down 1,846 ft.; show oil and gas 1,787 ft.; top salt 990 ft.
Phillips Pet. Corp.'s No. 1 Southwestern Life Ins., 330 ft. from S, 2,310 ft. from W, Sec. 73, Blk. OW ..... Shut down 1,660 ft.
Plymouth Oil Co.'s No. 3 Cerry, 1,655 ft. from N, 1,650 ft. from E, Sec. 29, Blk. 178, T.C.R.R. Sur. ..... Drlg. 350 ft.
Rowen & Tong's No. 1 McDonald, 1,170 ft. from N and 2,490 ft. from E, Sec. 46, Blk. 2, H.&G.N. ..... Top pay and total depth 1,605 ft.; running 6⅝-in. casing; flowing open 90 bbls. daily.
B. J. Spikes' No. 1 George Brown, 2,490 ft. SE and SW line, Sec. 8, Blk. 3 ..... Show oil 1,180-90 ft.; shut down 2,257 ft.
Schumaker et al's No. 1 Williams et al, 330 ft. N of middle of S line, Sec. 1, Blk. 117, G.C.&S.F. ..... Shut down 1,483 ft.
Shell Pet. Corp.'s No. 1 Jackson, 330 ft. NW of SE line and 330 ft. NE of SW line, Sec. 28, Blk. S, H.&T.C. Sur. ..... Top salt 1,020 ft.; shut down 1,504 ft.
Shell Pet. Corp.'s No. 1-B University, 1,650 ft. from S and 330 ft. from W, Sec. 30, Blk. 16, University Land.. Drlg. 1,605 ft.
Shell Oil Co.'s No. 1-C University, 1,661 ft. from N and 1,050 ft. from W, Sec. 31, Blk. 16, University ..... Top pay 930-40 ft.; total depth 961 ft.; estimated good from 6,000 to 8,000 bbls. oil daily; shut down for storage.
Skelly Oil Co.'s No. 2 Tippett, 974 ft. N of No. 1, Sec. 108 ..... Cleaning out 550 ft.
Southern Crude O. P. Co.'s No. 1 Jackson T-139, Sec. 28, Blk. 3, 1,487 ft. from NE, 2,519 ft. from SE cor..... Location.
Talbot et al's No. 1 Unsicker, 150 ft. each way from NE and SE cor. line of Sec. 25, Blk. 10, H.&G.N. Sur. ..... Material on ground.
Taylor-Link's No. 3 University, Sec. 31, Blk. 16, 330 ft. from N and W ..... Location.
Taylor-Link's No. 4 University, Sec. 31, Blk. 16, 990 ft. from N and 1,050 ft. from W ..... Location.
Taylor-Link's No. 5 University, 990 ft. from S and 1,050 ft. from W of Sec. 30, Blk. 16 ..... Location.
Taylor-Link's No. 6 University, 330 ft. from N and 2,310 ft. from W of Sec. 31, Blk. 16 ..... Location.
Texas-Phillips' No. 1 Campbell, 1,320 ft. from SW, 330 ft. from SE, Sec. 46, Blk. 10, H.&G.N. ..... 1,000 ft. oil in hole; shut down 1,937 ft.; oil from 1,710-13 ft.; hole fills 250 ft. in 12 hrs.
Tidal Oil Co.'s No. 1 McDonald, 330 ft. from N and E S half NW, Sec. 46, Blk. 12 ..... Location.
Tidal Oil Co.'s No. 2 University, 2,970 ft. from N, 2,310 ft. from E, Sec. 3, Blk. 18, University Land ..... Drlg. 1,636 ft.
Tidal Oil Co.'s No. 3 University, 2,310 ft. from S and 1,650 ft. from E, Sec. 17, Blk. 20, University Land... Drlg. 1,725 ft.
Tower & McKanna's No. 1 University, Sec. 14, Blk 16, 2,310 ft. from N and E ..... Location.
Tower & McKanna's No. 1 University, 330 ft. from S and E lines of Sec. 3, Blk. 17 ..... Drlg. 1,795 ft.; show oil 1,595-1,605 ft.
Transcontinental Oil Co.'s No. 1 University, NE NW SW Sec. 18, Blk. 18 ..... Top lime 1,155 ft.; shut down 4,405 ft.
Trees Oil Co.'s No. 2 Trees, 330 ft. from N and W of SE cor., Sec. 43, Blk. 8, H.&G.N.R.R. Sur. ..... Drlg. 480 ft.
Trees Oil Co.'s No. 3 Trees, 330 ft. from S and W of Sec. 90, Blk. 8, H.&G.N. ..... Location.
R. D. Webb's No. 2 fee, 1,665 ft. from N and 951 ft. from E line of Sec. 312, L. P. Scott Sur. ..... Location.
World Oil Co.'s No. 1 University, 330 ft. from N and 2,310 ft. from E of Sec. 31, Blk. 16, University Land.. Drlg. 455 ft.
World Oil Co.'s No. 1-B University, 330 ft. from N and E, Sec. 13, Blk. 18 ..... Drlg. 1,080 ft.

PRESIDIO COUNTY

L. C. Brite's No. 4 Brite, 271 ft. from N, 1,188 ft. from E, Sec. 245, Blk. 4 ..... Shut down 670 ft.
Eastland Oil Co.'s No. 1 Tootle, C Sec. 17, Blk. 1, D.P. R.R. Sur. ..... Spudded; shut down.
Phillips Pet. Co., Empire G. & F. Co., Delmar Co. and C. E. Miller's No. 1 Tootle estate, C NE. Sec. 75, Blk. 3, D.&P.R.R. Sur. ..... Slight oil show and gas at 2,707 ft.; show oil at 2,767 ft.; drlg. 4,025 ft.
T. P. Coal & Oil Co.'s No. 1 Bogel, 330 ft. S and W, Sec. 83, Blk. 8, G.H.&S.A. ..... Drlg. 510 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 1-C University, 2,598 ft. S and 250 ft. W of NE cor., Sec. 1, Blk. 2, University Land.. Top pay 2,903 ft.; 1,000 ft. fluid in hole; drlg. 4,713 ft.
Kemrow Co.'s No. 1 Sawyer Cattle Co., 1,320 ft. from N and 1,980 ft. from E line, Sec. 8, J. G. Robinson Sur. ..... Location.
Skelly's No. 5 University, 1,392 ft. from W, 2,970 ft. from S line of Sec. 33, Blk. 8, University Land ..... Location.

REEVES COUNTY

Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Public School Land, elev. 2,847 ft. ..... Shut down 2,900 ft.; pipe out.
H. T. Hansford's No. 1 Williams, 150 ft. from S and W, Sec. 17, Blk. 6, H.&G.N. ..... Spudded and shut down.
Black & Fink's No. 1 Brooks, 1,980 ft. N and 660 ft. W, Sec. 16, Blk. 59 ..... Drlg. 480 ft., gyp.
Southern Crude O. P. Co.'s No. 1 Kloh-Rumsey, 2,310 ft. N and W SE cor., Sec. 23, Blk. 51 ..... Cem. 12-in. casing 1,540 ft.
Thomas & Brann et al's No. 1 Hughes, C of NE of Sec. 7, Blk. L, T.C.R.R. ..... Location.
David R. Thompson's No. 1 A. A. Eddins, Sec. 9, Blk. C-1 ..... Shut down 5,658 ft.; fishing 8-in. casing.

RUNNELS COUNTY

Herbert Oil Co.'s No. 1 Currie, 1,866 ft. SE of NW line, 335 ft. SW of NE line, Gray Carroll Sur. ..... Underreaming 2,560 ft.
Vacuum Oil Co.'s No. 4 McMillan, 555 ft. S and 717 ft. W of NE cor., Lot 22, Domingo Diaz Sur., No. 532.. Location.

SCHLEICHER COUNTY

Fort McKavet's No. 1 Tisdale, Sec. 1,499, River Section, 3,630 ft. from S, 150 ft. from W ..... Set 6-in. casing 3,023 ft.; shut down 3,500 ft.
Interstate's No. 1 Whitten, 1,320 ft. from N and W, Sec. 35, Blk. LL, T.C.R.R. Sur. ..... Hole slopped over with oil at 4,925 ft.; made one good flow; total depth 5,025 ft.; underreaming 6⅝-in. casing to shut off water.
Underwood's No. 1 Tisdale, 2,095 ft. N and 1,185 ft. from E, Sec. 74, Blk. LL ..... Spudded and shut down.

SCURRY COUNTY

Camp Spring Oil & Ref. Co.'s No. 3 Guinn, 1,300 ft. from S, 300 ft. from E, Sec. 12, Blk. 3, H.&T.C.R.R. Sur. ..... Shut down 320 ft.
Cottingham & Briscoe's No. 1 Trees, C SE Sec. 147, Blk. 97 ..... Drlg. 1,160 ft.
I. B. Mimms et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C. Sur. ..... Spudded and shut down 300 ft.
G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Fishing 3,700 ft.
Texas-Canadian's No. 1 Moore, 1,320 ft. from S and W Sec. 379, Blk. 97 ..... Location.

SUTTON COUNTY

Phillips Pet. Co.'s No. 1 A. G. Holman, 2,310 ft. S and 330 ft. W NE cor., Sec. 25, G.C.S.D.&N.GR.R. Sur..... Fishing 6,635 ft.; making 1,500,000 ft. gas 6,635 ft.
L. G. Priest's No. 1 Allison, 1,320 ft. N and E of SW cor. Sec. 52, Blk. A, T.&P. Sur. ..... Set 15-in. casing 530 ft.; shut down 3,660 ft.

TAYLOR COUNTY

Dunnigan & Shell Pet. Corp.'s No. 1 Davidson, 2,811 ft. S and W of NE cor. S half of W. R. Willis Sur. No. 122 ..... Drlg. 1,530 ft.
John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor. Sec. 46, Lunatic Asylum Land ..... Drlg. 4,929 ft.; show oil 4,917 ft.
Mid-Continent Oil & Gas Co.'s No. 1 Cody, 330 ft. N and E of SW cor., M. E. Cody 116.7-acre tract, Guadalupe County School Land ..... Shut down 2,550 ft.
Root Drlg. Co.'s No. 1 Martin, 990 ft. E and 1,650 ft. N of SW cor. Sec. 20, Blk. 19, T.&P.R.R. Sur. ..... Drlg. 2,985 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.K.&T.R.R. Sur. ..... Underreaming 1,150 ft.; to shut off hole full of water.
Keck-Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Blk. D-7, E.L.R.R. Sur. ..... Drlg. 2,650 ft.
Mrs. J. B. McPhee's No. 1 Sam Belt, C Sec. 78, Blk. D-7, E.L.R.R. Sur. ..... Shut down 880 ft.
Milham Exploration Co.'s No. 1 Bassett, Sec. 76, Blk. Y, W. E. Robertson Sur. ..... Cem. 6⅝-in. casing 3,986 ft.; shut down 5,325 ft.
Woodley & Jones' No. 1 Pankenham, C SE NW, Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. ..... Shut down 625 ft.

TERRY COUNTY

Kingsland O. P. Co.'s No. 1 Brownfield, C NW SW SW Sec. 7, Blk. 1-A, E.L.R.R. Sur. ..... Fishing bailer 5,080 ft.

TOM GREEN COUNTY

Cannon et al's No. 1 Rust, 990 ft. S, 990 ft. W of NE cor. of Sec. 745 ..... Rig.
Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,628, E. H. Ringer ..... Shut down 2,000 ft.
Fuhrman Pet. Co.'s No. 1 Wardlaw, 2,650 ft. from N and E of Sec. 6, Blk. 17, H.&T.C. ..... Location.

UPTON COUNTY

Cranfill & Reynolds' No. 1, 220 ft. each way from N line, Sec. 15, Blk. 5, E.&T.C. Sur. ..... Location.
Dixie Oil Co.'s No. 31 Burleson, 330 ft. from N and 660 ft. E, Sec. 2 ..... Location.
Humble Oil & Ref. Co.'s No. 12 Ricker, 5,008 ft. from NW, 150 ft. from NE line, Denton Sur. ..... Location.
Prairie Oil & Gas Co.'s No. 1 Quatters, 330 ft. from S and 1,980 ft. from W, C. C. Dewitt Sur. ..... Drlg. 815 ft.
T. P. Coal & Oil Co.'s No. 13-A Lane, 330 ft. from S, 660 ft. from E of No. 5-A ..... Location.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE, Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 4,850 ft.
O. O. Owens, No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Gas sand 2,491-2,520 ft.; tested 125,700 ft. gas; reset 8-in. 2,511 ft.; cleaning out 4,210 ft.
Phantom Oil Co.'s No. 1 Ingram, 1,320 ft. from S and W, Sec. 44, Blk. D-8, G.C.&S.F.R.R. Sur. ..... Location.
Producers Oil Co. et al's No. 1 Everett Bros., 2,310 ft. S and 330 ft. E of NW cor., Sec. 40, Blk. DB, C.C.S.D &R.G.N.G. Sur. ..... Shut down 3,100 ft.
Dyar Bros. et al's No. 1 Wilson, 6,830 ft. N NE cor., Sec. 1, T.&P. Sur., thence 1,680 ft. E, Sec. 115, Blk. E, G.C.&S.F. Sur. ..... Fishing 3,472 ft.
Valvert Oil Corp's No. 1 Bassett, C NE, Sec. 47, Blk. Y.. Set 15½-in. casing 767 ft.; set 10-in. casing 1,510 ft.; shut down 3,900 ft.

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Port Arthur, Texas
Galveston, Texas

WARD COUNTY

Alpine Oil & Gas Co.'s No. 1 Boogher, 1,980 ft. SE and NE, Sec. 11, Blk. 5, H.&T.C. ..... Top salt 760 ft.; cem. 8-in. casing 758 ft.; drlg. 920 ft.

Atlantic et al's No. 1 Dorr, 1,730 ft. S, 990 ft. W, Sec. 2, J. Howe ..... Spudding.

Barstow Oil & Gas Co.'s No. 1 Monroe, Sec. 50, Blk. 33 .. Spudded and shut down.

C. C. Dorr et al's No. 1 Costley, 1,722 ft. from NW, 990 ft. from NE line of Sec. 2, Jos. Howe Sur. ..... Location.

Cranfill & Reynolds' No. 1 Robeson, 220 ft. NW and NE Sec. 15, Blk. 5, H.&T.C. ..... Spudding.

Continental Oil Co.'s No. 2 Sealey, 330 ft. S and W, Sec. 81, Blk. A, G.M.M.M.&A. Sur. ..... Top brown lime 2,280 ft.; cem. 8-in. casing 2,284 ft.

Gulf Prod. Co.'s No. 2 Hutchins, 330 ft. N and E, Sec. 7, Blk. O ..... Top salt 1,240 ft.; top pay 2,529 ft.; 2,000,000 ft. gas; drlg. 2,830 ft.; flowing 35 bbls. daily 2,828 ft.

Gulf Prod. Co.'s No. 6 O'Brien, 2,310 ft. from N, 330 ft. from E, Sec. 20, Blk. F, G.M.M.B.&A. Sur. ..... Top salt 1,076 ft.; drlg. 2,541 ft.; cem. 8-in. casing 2,381 ft.; 40,000,000 ft. gas.

Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW Sec. 18, Blk. 5, H.&T.C. ..... Location.

L. C. Harrison et al's No. 1 Wristen, 990 ft. from S and W lines of Sec. 26, Blk. B-28 ..... Spudding.

E. B. Lovelace et al's No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 162, Blk. 34, H.&T.C.R.R. ..... Fishing 710 ft.; drlg. by tools.

Penn & Atlantic's No. 1 Pecos Mercantile Co., Sec. 16, Blk. 34 ..... Drlg. 2,065 ft.; 8-in. casing 1,638 ft.

Shipley et al's No. 1 Monroe, 330 ft. SE SW, Sec. 3, Blk. 1 ..... Shut down 517 ft. for casing.

WINKLER COUNTY

Atlantic Oil Prod. Co.'s No. 6 Hendricks, 330 ft. S, 2,310 ft. W of NE cor., Sec. 44, Blk. 26, School Land ..... Drlg. 2,200 ft.

American Maracaibo Co.'s No. 2 Hendricks-B, 1,980 ft. N and 1,650 ft. E of SW cor., Sec. 28, Blk. B-5 ..... Cem. 12½-in. casing 170 ft.; top lime 2,599 ft.; top pay 2,731 ft.; 2,000 ft. oil; increase 2,875 ft.; show water 2,928-31 ft.; running 6-in. casing 2,945 ft.; total depth 3,416 ft.; plugging back to 2,800 ft.

V. T. Bolin's No. 2 Brown et al, 2,000 ft. S and W of NE, Sec. 4, Blk. B-5, Public School Land ..... Top salt 1,300 ft.; total depth 2,520 ft.; shut down 6-in. casing.

Cranfill & Pickrell's No. 2 Hutchins, 2,310 ft. S and W Sec. 47, Blk. 26 ..... Total depth 2,520 ft.; shut down for 6-in. casing.

Gulf Prod. Co.'s No. 2-B Lum Daugherty, 2,310 ft. from N and 1,320 ft. W, Sec. 22, Blk. 26, P.S.L. ..... Top lime 2,495 ft.; drlg. 2,499 ft.

Humble Oil & Ref. Co.'s No. 13-C Hendricks, 440 ft. from S, 330 ft. from W, Sec. 10, Blk. B-12 ..... Top lime 2,548 ft.; o'l and gas show 2,880 ft.; total depth 2,890 ft.

Humble O. & R. Co.'s No. 1-D Hendricks, 330 ft. from S, 2,310 ft. from W of Sec. 41, Blk. 26 ..... Building rig.

Liner Drlg. Co.'s No. 1 Campbell, 330 ft. from N and E cor., Sec. 2, Blk. B-5 ..... Shut down 2,005 ft. for funds.

Continental Oil Co.'s No. 1 Morton-A, 330 ft. N and E of Sec. 16, Blk. B-12 ..... Fishing bit 2,760 ft.

Shell-Llano Oil Co.'s No. 7 Scarborough, 1,020 ft. from N and W, Sec. 2, Blk. 77 ..... Top salt 1,260 ft.; total depth 2,270 ft.

Skelly Oil Co.'s No. 5 Daugherty, 1,326 ft. W, 2,310 ft. S, Sec. 22, Blk. 26 ..... Location.

Southern Crude O. P. Co.'s No. 4 Hendricks T-88-CX, 1,375 ft. N, 330 ft. E, Sec. 21, Blk. 26 ..... Top lime 2,417 ft.; cem. 8-in. casing 2,529 ft.; total depth 2,790 ft.; oil and gas show and water at 2,788-90 ft.; flowing 358 bbls. oil, 30 per cent b.s. and water.

Southern Crude O. P. Co.'s No. 2 Hendricks T-89-L, 440 ft. from N and 1,320 ft. from W, Sec. 15, Blk. B-12 .. Drlg. 2,510 ft.

Southern Crude O. P. Co.'s No. 4 Hendricks T-90, 2,310 ft. S and E of Sec. 47, Blk. 26 ..... Top lime 2,242 ft.; cem. 8-in. casing 2,255 ft.; drlg. 2,283 ft.

SOME DEEPEST AND SHALLOWEST OIL SANDS

(Continued from Page 40)

erned by market conditions in its decisions as to the time and amount of leasing to be done, but work will be carried on systematically in mapping the whole area and some exploratory drilling will be done in areas that promise satisfactory results.

Promising Areas

There are two or three new areas of promise in the Permian Basin and in the district around San Angelo, but time will be required to prove their real worth. The Taylor-Link Pool is on University of Texas land and the well south of San Angelo in Schleicher County drilled by the Phillips Petroleum Co., which had a showing of oil at 4,925 feet is just east of another University block and it is possible that oil may be found on the University land if this Phillips test proves a producer of commercial worth.

In the Big Lake Field which is on University land there is considerable activity for here the deep well of the Group 1 Oil Corp. is producing from a total depth of 8,523 feet and making about 2,800 bbls. of 59.5 degree A.P.I. gravity oil with about 25,750,000 cubic feet of gas daily.

This well is cased with 5 3/16-inch casing to a depth of 6,176 feet and there is therefore 2,347 feet of open hole and as this oil has a paraffin base and is being produced with a large volume of gas there seems to be some cooling action on the oil in the lower part of the hole that is depositing some paraffin on the walls of the well and the production curve recently has shown several days of decreased oil volume, which seems to indicate that the building up of a paraffin bridge in the well is probable.

Because of the fact that this is an open hole for the lower 2,347 feet it is not practical to run tools or paraffin scraper to clean the hole until it is absolutely necessary, for caving might occur and the well be lost.

It is being produced now with a casing-head pressure around 175 pounds and the two lead lines from the well head to the pipe line are quite cool, even though the temperature at the bottom of the hole is about 170 degrees Fehrenheit. The well head is covered with a bank of sand enclosed in a box made out of old tank steel.

The other wells drilling in this pool are rapidly nearing completion, and are getting along in good shape, although some trouble was experienced in the rotary-drilled well, No. 2-C University of the Big Lake Oil Co., which lost returns, and, being unable to establish them again, resorted to the experiment of turning a stream of sulphur water secured from several adjacent producing wells into the hole.

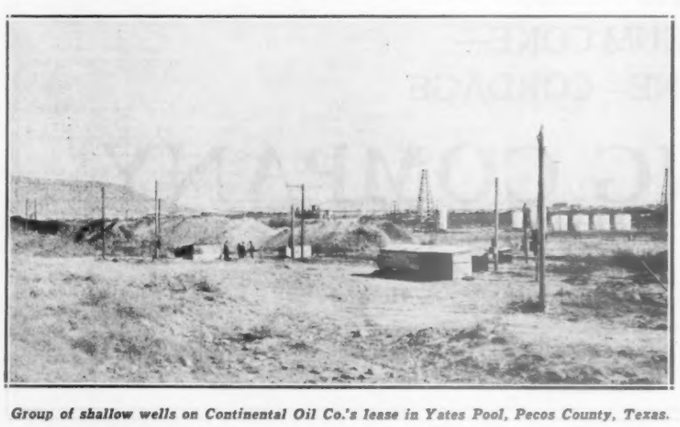
With this water flowing into the hole, but without any return of it to the surface, they were able to make 60 or 70 feet of hole per day. It is evident that the cuttings are going back into the cavity and it is hoped that in time they will fill it so that flow to the surface will again be set up.

Corrosion Still a Problem

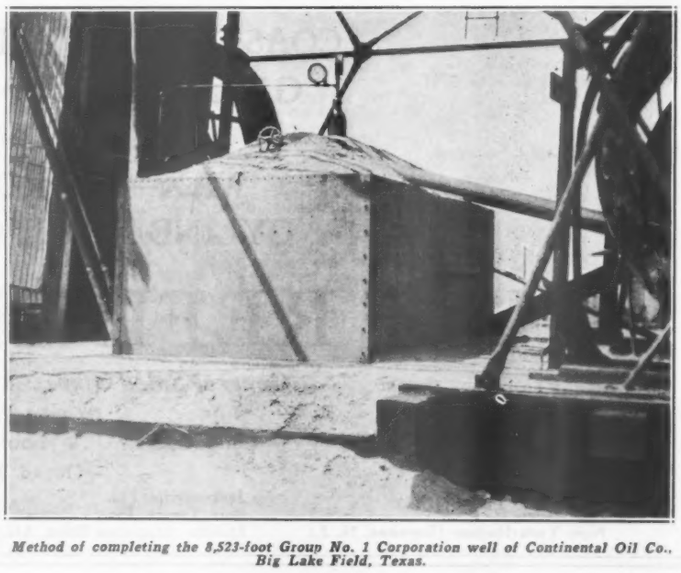
There is still a good deal of trouble in this field from corrosion, especially of bolted steel storage tanks on the leases, for it is found that the average life of bottoms of these tanks is from 9 to 11 months. A good deal of experimenting has been done with various kinds of paints and thick mixtures that had the consistency of tar and asphalt and was smeared over the bottom about one-half inch thick, but none has been successful thus far.

In Crane County where considerable

An electric driven pump station on the edge of one of the trenches on the Continental Oil Co.'s property.



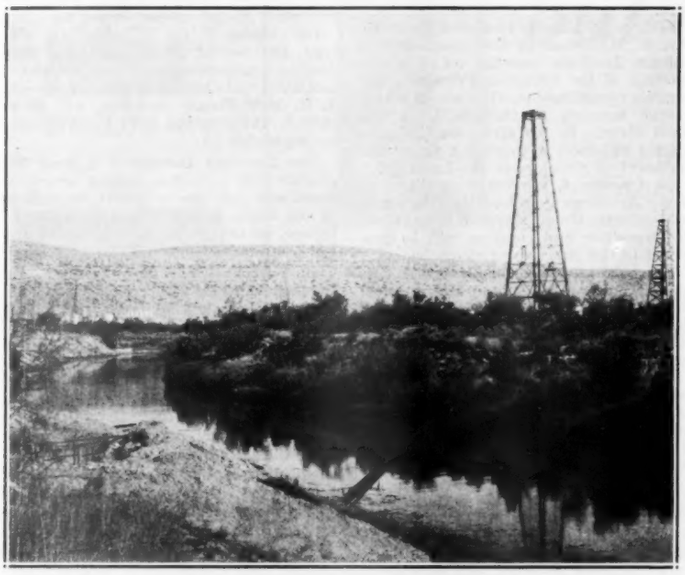
Group of shallow wells on Continental Oil Co.'s lease in Yates Pool, Pecos County, Texas.



Method of completing the 8,523-foot Group No. 1 Corporation well of Continental Oil Co., Big Lake Field, Texas.

trouble has been experienced with tank bottoms corroding it has been found that concrete poured in the tank has served very well as a bottom and added materially to the life of the tankage. Incidentally, this concrete is made from sand secured from the dunes of this area, which is simply screened to remove large pieces of foreign material and then mixed with the cement in the ordinary manner.

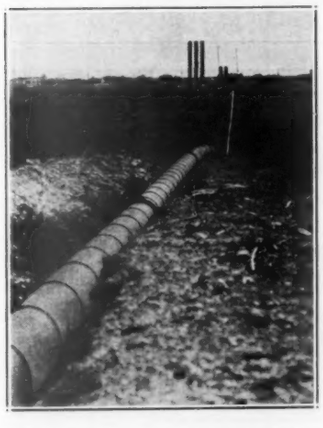
The Texon Oil & Land Co. (now Continental Oil Co.) has been experimenting



View of the Pecos River as it passes through the Yates Pool showing a board placed across the stream to skim oil from the surface of the water.

with bottom hole plugging to shut off water in its 3,000-foot wells and thus far has plugged four wells and in one of them some increase in oil production has been noted, but in all of them the amount of water coming into the hole has decreased.

Cement has been used for this plugging operation and it has been placed by use of a dump bailer and in one case the crew has used a torpedo shell for carrying the cement into the hole and drilled it up



Gas line leading to site of new gasoline plant being built by Humble Oil & Refining Co., in Yates Pool, Pecos County, Texas.

afterward. In all cases the cement plug is capped by lead wool.

Deep Tests Are Important

Everyone is awaiting the completion of the deep tests now going down in the Big Lake Field and if they are producers of commercial size it would appear that this territory will be a factor in West Texas production for many years to come with the showings made in the upper oil zones as well as the deep pay at 8,500 feet.

It is stated that it has never been definitely determined what character of formation is producing the oil in the Texon deep well for in drilling it in no opportunity was offered to secure samples and after it became a well it has not been considered safe to make any attempts to run tools or bailer, even if it had been possible against the gas flow, so one thing may be proven by the next completion to the 8,500-foot level, and that is the type of formation from which the oil is being produced. This will be of great value to all operators in West Texas, where there are now 15 tests drilling below 5,000 feet, all started with the avowed intentions of drilling as deep as possible.

World's Shallowest Wells

It has always been admitted that this region of the Pecos was a land of extremes in many things, and it seems that it can be as unusual in its kind of wells as in anything else, for within about 70 miles as the crow, or airplane, flies there is an area that is said to have the shallowest wells producing oil.

Some time ago it was noted that oil was floating on the Pecos River where it flows through the Yates Pool and investigation disclosed the fact that this oil was seeping out of a water sand that outcropped along the river bank and later identified as the Trinity formation.

To test out its possibilities as a producing horizon some shallow wells were drilled at some distance back from the river and oil was found in producing quantities at depths varying from 20 to 275 feet, depending upon the distance to the west that the well is away from the river bank. This sand dips toward the Pecos River from the west.

These shallow wells are equipped with pump jacks driven with electric motors of the type usually used for pumping water and the balance of the work around the well is done by hand.

When tubing has to be pulled two men attach a pipe wrench to the upper part of the pipe and lift out the joint, which constitutes the "string" in the wells near the river.

Even though it was possible to start drilling with a spudder on one of these locations after breakfast and complete the well before noon it has been found that it was not the cheapest way to produce this oil so trenching of the land has been resorted to and this kind of producing operation has given rise to some rather novel procedures.

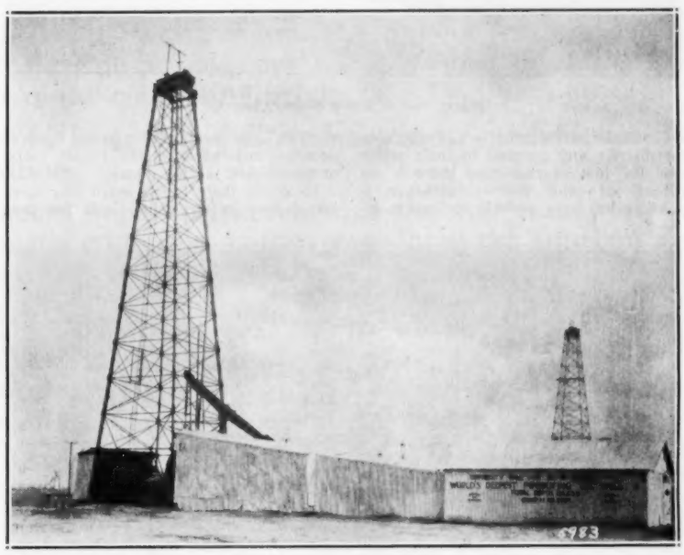
It was found that if the trenches back from the river were properly located they could very effectively secure all the oil so in this case the oil became a migratory substance and the owners of the land "down dip" were most fortunate.

It is reported that the trench wells are securing from 6,000 to 7,000 bbls. of pipe line oil daily but it is not at all certain how long this rate of production will keep up for it seems that a number of conditions can affect the output. It will be interesting to follow this operation to its completion and note whether water flooding will be resorted to as a final means of recovering the last of this oil from this sand, which is normally a water sand in other parts of Texas.

Unique Gasoline Plant

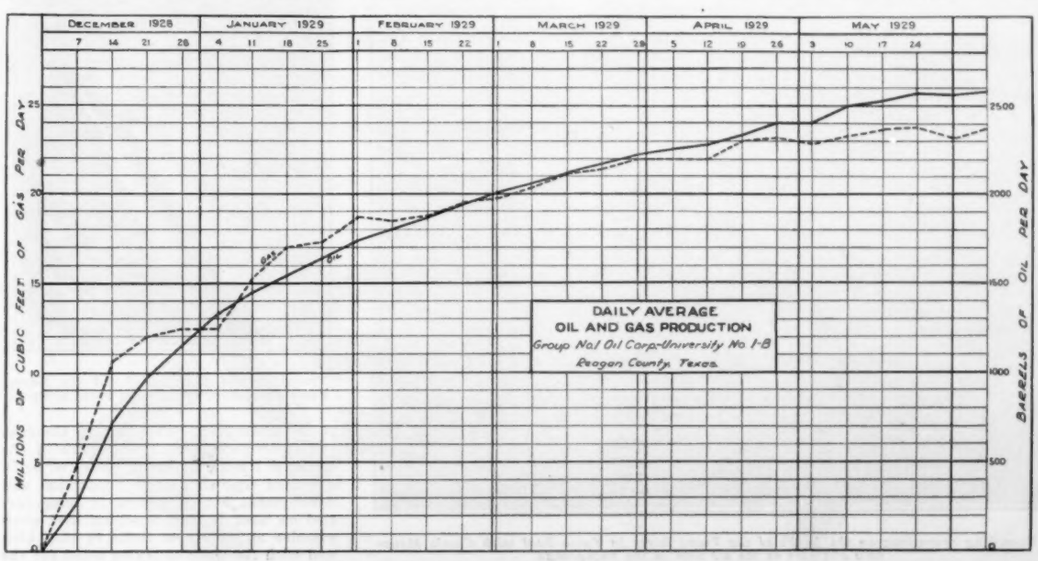
The Yates Pool is still a large potential producer of oil and the Humble Oil & Refining Co. is now going to make use of the gas that is produced with the oil by passing it through a new 22,000,000-cubic-foot-per-day capacity gasoline plant.

This plant is unique in that it is of the absorption type but operated without mechanical compression of the gas for it is estimated that well pressures will be sufficient to deliver the gas to the absorbers and pass it through them. The gas will not be treated as it goes to the gasoline plant, but a portion of it will be scrubbed for use as fuel for engines and for domestic purposes for houses on the lease.



Continental Oil Co.'s Group No. 1 Oil Corp. well in the Big Lake Pool, the world's deepest producing well—8,523 feet.

The pipe lines for gathering the gas are laid on the surface of the ground with very little trenching, for the reasons that this country lends itself very nicely to this type of construction so far as weather conditions are concerned, and because the surface of the limestone hills of this district would present some problems in costly rock work if the ditching was to be done very deep. Naylor spiral welded pipe is used for this job with Victaulic couplings and all other details of the installation are in keeping with this very modern type of equipment. The



plant is scheduled to start operation October 1, 1929.

Marketing the Product

It is understood that the gasoline produced at the Humble's plant in the Yates Pool will be mixed with crude oil from that district and pumped to their refineries, for just at this time there is no railroad into this district, although a franchise has been granted for one to be laid between Rankin and Iraan. Pipe lines into the district are now loaded and while some of the gasoline may be distributed locally by the Humble gasoline truck train the major portion of the product of the plant will probably be mixed and sent out in the pipe lines now serving this district.

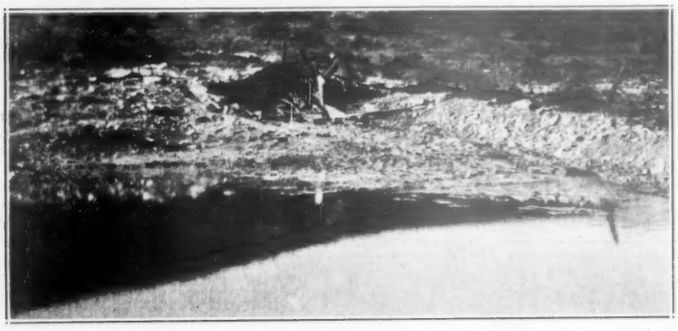
The Taylor-Link area to the west of the Yates Pool is creating a good deal of interest and some deep tests outside of the Big Lake area are also looked upon as possible influences in the future trend of production in this district.

However, there is not much new work being done in the older fields for they all have ample production to meet their proration requirements and there is no advantage in drilling additional wells at this time.

The trouble with corrosion in the area south of Winkler County outside of Yates Pool is still serious and the producing companies are trying many expedients to keep their equipment in working order.

It is reported that the all aluminum tank on the State-Lassiter lease of the Gulf Production Co. is still holding in good shape and it is intended to cut it down and ship it to Tulsa to be set up at the Petroleum Exposition in October.

The area of West Texas south of the Texas & Pacific Railroad seems to be in a settled condition as to production and development but new work is being carried on west of Fort Stockton that gives promise of some new fields in that area and with the work of laying track for the Orient road from Alpine west to the Rio Grande River actually under way and to be finished in 14 months it is predicted that the territory traversed by this railroad will soon enjoy an era of prosperity with new oil development playing its part in the general expansion program.



Water well in Upton County, Texas.

Stream leading from water well in Upton County, Texas.

Trenching operations on the banks of the Pecos River in Yates Pool with Castle Mountain and part of the oil field in the background.

Trench in the Continental Oil Co. lease, Yates Pool, from which oil is being pumped.

All aluminum tank on State-Lassiter lease of Gulf Production Co., Crane County, Texas, after 17 months' service.

IMPORTANT MEETINGS SLATED DURING PETROLEUM EXPOSITION

Tentative outlines of the important meetings to be held during the International Petroleum Exposition and Congress in Tulsa, which includes the two pre-exposition dates of October 3 and 4, and the regular October 5 to 12 period, have been submitted to William B. Way, general manager, it was announced this week.

Early arrangements furnished by President E. B. Reeser of the American Petroleum Institute provide for separate meetings of the American Petroleum Institute's committees on the code of ethics on the morning of October 3, at the Hotel Mayo. In the afternoon the committees will meet to prepare a report for the board of directors of the Institute.

On October 4, the board of directors of the American Petroleum Institute will meet at the Hotel Mayo. Highlights of the exposition and congress will be presented to the directors at this session.

The petroleum division of the American Institute of Mining and Metallurgical Engineers will also hold their sessions on these two days. J. B. Umpleby, president of the division, will have charge of the meetings.

Four technical sessions of the A.I.M.E. are being arranged and a smoker will be given by the Mid-Continent division on the evening of October 3. Problems of production engineering will occupy a large part of the program.

Interesting papers to be read in the A.I.M.E. sessions are Joseph E. Pogue, a summary of the existing economic condition of the industry; W. P. Haseman, on principles controlling spacing of oil wells; Stender Sweeney, on spacing at Long Beach, and Paul Rudeman, on spacing of gas wells.

Well spacing in particular fields of Texas, Oklahoma, Kansas, Louisiana, Arkansas and the Appalachian states, will be covered in the papers. The October 4 sessions will take up general topics. Flowing wells will be given particular consideration.

The A.I.M.E. program is being arranged by President Umpleby, A. W. Ambrose, C. V. Millikan, Charles E. Beecher, W. W. Scott, associate vice chairman, and L. G. E. Bignell, chairman of the Mid-Continent section, and Messrs. Brandenthaler, George Whiteford, Power, Bennett, Goodrich, Porter and Rudeman, of the local committee.

On October 7, the Mid-Continent district, Division of Development and Production Engineering, American Petroleum Institute, will open their two-day session. J. R. McWilliams, chairman, will be in charge. The program is to be announced by September 15.

The American Association of State Geologists will present a general review of conditions and the principal formations in the states of the Union, in the auditorium, on October 8. A. I. Levorsen and Dr. Charles N. Gould will be in charge.

On October 9, the Pioneers of the Oil Industry will hold their organization meeting. A charter will be drawn up and the plans which have been made to aid unfortunate veterans of the industry will be announced. Barney E. Horrigan is chairman of the Old Timers committee.

On the night of October 9, the Mid-Continent Oil and Gas Association will hold its banquet, at which Homers S. Fox, United States Board of Trade representative at London, England, will be the speaker.

The organization meeting of the Independent Producers Association, of which Wirt Franklin is president, will be held at the Exposition grounds on October 10. This association is expected to wage a stiff fight for a tariff on crude oil, and to give the independent producer a powerful voice in conservation parleys.

Dates have not been set for the meetings of the marketers groups, the Western Refiners Association, the American Association of Petroleum Geologists, and a number of other influential associations.

"CASH" CARMAN DEAD

BRADFORD, Pa., Aug. 31.—Cassius M. Carman, age 84 years, a driller in the Bradford and other fields since 1879, died yesterday at his home near here. Mr. Carman won the sobriquet of "Dry Hole Cash" after a long string of unsuccessful drilling operations on his own behalf. He was widely known and greatly respected in the oil industry.

Fisher Governor will be in Booth No. 90

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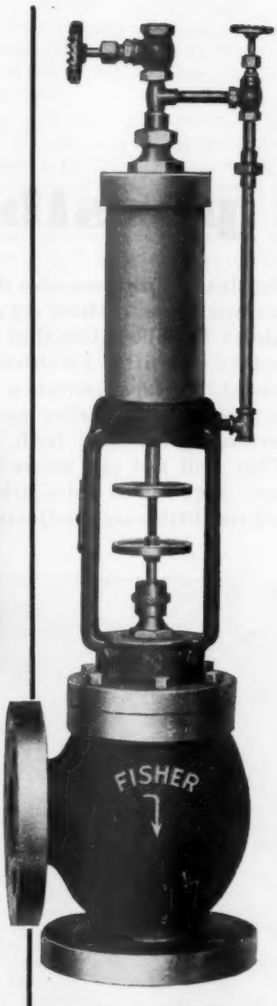

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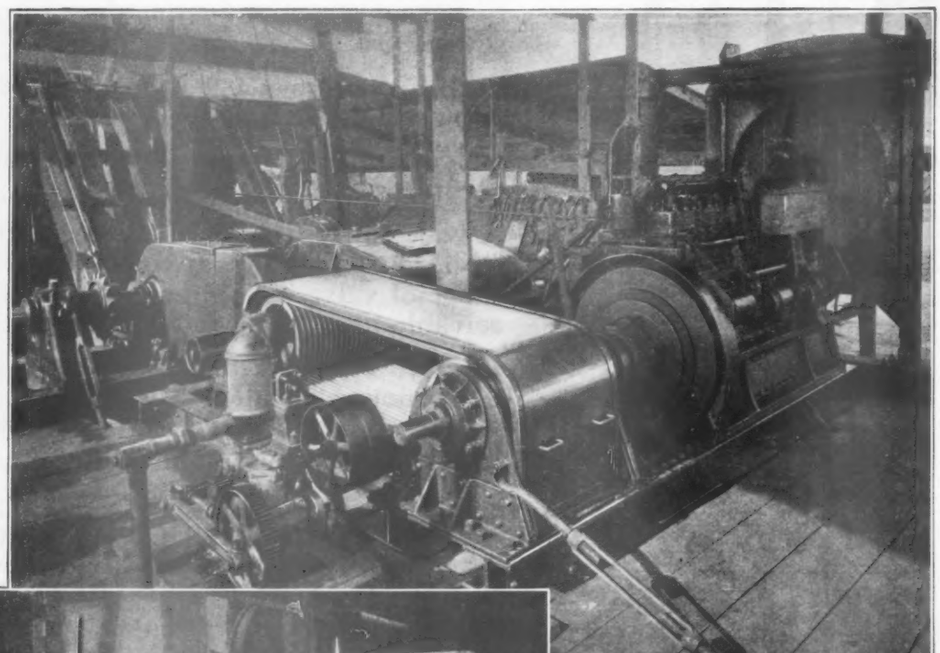
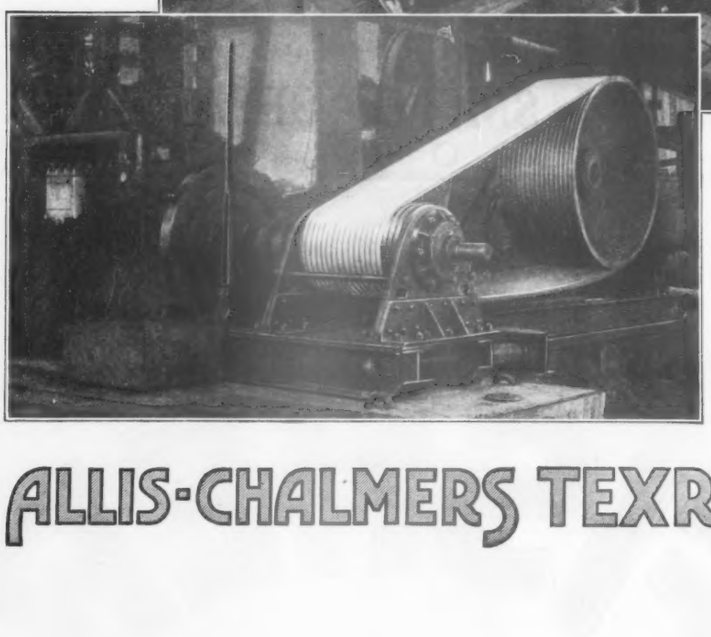
- Reducing Valves, Pressure Regulators
  - for all pressures—liquids, gases, steam
- Differential Pressure Regulators
- Vacuum Regulators
- Strainers
  - pipe, suction and drip pocket
- Liquid Level Controllers
  - direct and remote type
- Lever Valves
  - air, gas, or liquid
- Float Valves
- Fluid Mixers
- Hydraulically Operated Valves
- Relief Valves
- Back Pressure Valves
- Steam Traps—Air Traps—Gasoline Traps—Grease Traps
- Exhaust Heads
- Steam and Oil Separators
- Drip Pockets
- Vapor Pressure Controllers
  - for oil storage tanks
- Boiler Gas Fuel Governors
- Gas Engine Fuel Regulators
- Automatic Gas Relief Valves
- Gas Pressure Regulators
  - main and house service
- Liquefied Petroleum Gas Regulators
  - for gas cylinders
- Gas Water Traps

FISHER

Texropes made it possible

Again the Texrope Drive has proved its dependability to transmit power economically under severe operating conditions. Texropes helped make possible the new combination cable tool and rotary drilling unit designed by the C. F. Camp Company for Mead Brothers, of Oklahoma. This flexible and positive short center drive permitted close coupling of the motor to the reverse clutch for operating the draw works. The slush pumps are also driven through Texrope Drives. There are many qualities about Texrope Drives that make them especially well fitted for driving oil well equipment. Texropes provide a cushioning effect between the driver and the driven machine protecting both from shocks. They will not slip under heavy loads. They require no lubrication or dressing and very little care or adjustment.





Texropes have been widely used on slush pumps, pipe line pumps, single and double reduction units, and on other oil field equipment requiring a positive and flexible drive needing but little attention. Texrope Drives for standard requirements are carried in stock at important oil field centers.

Allis-Chalmers Mfg. Co.
Milwaukee, Wis.

ALLIS-CHALMERS TEXROPE DRIVES

CALIFORNIA OIL FIELD OPERATIONS FOR JULY, 1929

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for July amounted to 26,796,627 bbls., an average of 864,407 bbls. per day. This is an increase of 43,586 bbls. per day over June production.

Total stocks of crude and all products in Pacific Coast territory increased during the month 3 890,740 bbls. The total stocks at the end of the month were 169,161,139 bbls. The total stock increase for 1929, up to July 31, was 29,160,245 bbls. Comparative figures as of July 31, 1929, June 30, 1929, and July 31, 1928, are shown in detail in this report.

Ninety-one wells were completed during the month with an initial daily production of 133,796 bbls., compared with 62 wells completed during June with an initial production of 123,001 bbls.

PRODUCTION

(Figures of production and stocks are in barrels of 42 gallons)

District—	Bbls. per month	Daily average July, 1929	Daily average June, 1929	Daily average July, 1928
Kern River	482,752	15,573	14,510	6,172
Mount Poso	140,076	4,519	4,837	384
Fruitvale	65,126	2,101	1,657	243
Round Mountain	552	18	45	50
McKittrick	141,150	4,553	4,319	4,834
Midway-Sunset	2,044,863	65,963	64,601	71,855
Elk Hills	486,611	15,697	15,175	21,622
Lost Hills-Belridge	139,888	4,513	4,409	4,290
Coalinga	325,392	10,496	9,320	10,535
Kettleman Hills	107,345	3,463	3,305	.....
Wheeler Ridge	20,541	663	628	918
Watsonville	1,937	62	63	64
Santa Maria	131,320	4,236	3,974	5,228
Summerland	4,062	131	123	121
Elwood-Goleta	839,525	27,081	26,429	410
Santa Barbara	1,800	58	...	.....
Rincon	96,981	3,128	3,419	3,587
Ventura Avenue	1,757,701	56,700	59,271	53,645
Ventura-Newhall	153,197	4,942	4,876	5,774
Los Angeles-Salt Lake	46,782	1,509	1,561	1,557
Whittier	48,729	1,572	1,535	1,648
Fullerton (Brea Olinda)	491,450	12,950	12,488	14,740
Coyote	370,726	11,959	10,589	13,438
Santa Fe Springs	8,134,548	262,405	237,466	36,672
Montebello	300,170	9,683	9,533	11,862
Richfield	488,822	15,768	15,250	18,488
Huntington Beach	1,361,115	43,907	42,104	52,906
Long Beach	5,387,224	173,781	169,018	196,075
Torrance	418,773	13,509	12,801	18,083
Dominguez	312,392	10,077	9,711	11,599
Rosecrans	203,490	6,564	6,032	6,118
Inglewood	754,936	24,353	22,611	29,965
Newport	1,240	40	40	83
Seal Beach	1,557,675	50,248	46,651	33,772
Potrero	21,533	695	741	430
Lawndale	46,203	1,490	1,729	.....
Total	26,796,627	864,407	829,821	637,241
June	24,624,627	829,821		
Increase	2,172,000	43,586		

STOCKS

	July 31, 1929	June 30, 1929	July Stock Increase	July 31, 1928
Heavy crude, heavier than 20° A.P.I., including all grades of fuel	106,212,606	104,428,124	1,784,482	96,418,221
Refinable crude, 20° A.P.I. and lighter	34,621,117	33,294,635	1,326,482	19,041,584
Gasoline	14,690,899	14,265,792	425,107	12,908,549
Naphtha distillates	2,799,625	2,901,460	*101,835	1,429,416
All other stocks	10,836,892	10,380,388	456,504	9,955,536
Total all stocks	169,161,139	165,270,399	3,890,740	139,753,307

*Decrease.

DEVELOPMENTS

District	Rigs Up	Active Drilling	Completed	Daily Initial Output	Active Producing	Abandoned Wells Drillers	Abandoned Wells Producers
Kern River	7	5	6	1,050	1,092	0	1
Mount Poso	2	6	2	195	19	0	0
Fruitvale	3	3	1	571	6	0	0
Round Mountain	2	4	1	500	3	1	0
McKittrick	1	2	0	....	279	0	0
Midway-Sunset	12	28	8	3,118	2,099	4	0
Elk Hills	0	1	0	....	199	0	0
Lost Hills-Belridge	1	3	1	50	305	0	0
Coalinga	3	4	0	....	746	0	0
Kettleman Hills	2	31	1	950	2	1	0
Wheeler Ridge	0	0	0	....	32	0	0
Watsonville	0	0	0	....	6	0	0
Santa Maria	0	5	0	....	223	0	0
Summerland	3	3	1	300	90	1	0
Elwood-Goleta	2	4	0	....	12	3	0
Santa Barbara	2	3	2	270	2	8	1
Rincon	1	2	1	240	30	1	0
Ventura Avenue	3	36	7	10,175	174	0	0
Ventura-Newhall	1	24	1	50	505	1	0
Los Angeles-Salt Lake	0	0	0	....	310	0	1
Whittier	0	0	0	....	159	0	0
Fullerton	0	1	1	125	371	0	0
Coyote	1	2	1	50	298	0	0
Santa Fe Springs	20	159	23	88,176	446	0	4
Montebello	0	3	0	....	171	1	0
Richfield	3	9	4	1,195	275	0	1
Huntington Beach	3	6	2	123	550	1	1
Long Beach	10	87	23	21,429	954	1	5
Torrance	0	0	0	....	592	0	0
Dominguez	1	0	1	3,114	61	0	0
Rosecrans	0	2	1	1,500	100	1	1
Inglewood	2	2	1	410	225	0	0
Newport	0	1	0	....	2	0	0
Seal Beach	0	7	1	175	148	1	6
Potrero	2	4	0	....	4	2	0
Lawndale	0	1	1	30	7	17	0
Miscellaneous Drilling	26	133	0	....	....	19	0
July	113	581	91	133,796	10,405	54	27
June	134	617	62	123,001	10,305	35	16
Increase	21*	36*	29	10,795	100	19	17
Average for year 1928	107	520	59	56,802	10,823	15	26
Average for year 1927	97	404	75	39,992	11,276	23	21
Average for year 1926	95	422	76	32,635	11,288	24	17
Average for year 1925	105	417	79	42,247	11,393	28	12
Average for year 1924	103	510	103	43,412	10,903	28	21

*Decrease.

WORLD NEWS STORIES OF THE KOHLER ELECTRIC PLANT—No. 7

WHEN IS A LIGHTHOUSE LIGHTLESS?

THE answer is: When it's a radio beacon. . . . We still need *lighted* lighthouses, but these are being supplemented with lightless beacons which pierce the densest fog with their invisible radio beams.

Small automatic electric plants supply the current for these modern lighthouses. They run a few minutes, stop, start again. Hour after hour, week after week, they keep it up. In thick weather they run ceaselessly, flashing the guiding signal to anxious ships out in the blinding fog.

Just the job for a Kohler Electric Plant! And Kohler plants you'll find, giving radio-compass bearings from Point Arena, California; from Punta Mala, the "Bad Cape" at the Pacific gate to the Panama Canal; from Seal Island, Nova Scotia — to name only part of the Kohler-equipped stations maintained by the United States and Canada.

Approved by petroleum engineers

"Just the job for a Kohler Electric Plant." . . . It's hard to figure what *isn't* a job for these versatile machines, so capable in their performance of every sort of emergency or everyday service.

Especially noteworthy is the preference won by these plants in the oil fields, where engineers rely on them for lighting derricks, shops, offices, loading platforms, and pipe line stations, or supplying auxiliary power for drill presses, pipe-cutting machines, etc. Mail the coupon for information about models from 800 watts to 10 K. W., operating on natural gas or gasoline.

KOHLER OF KOHLER

Kohler Co. Founded 1873 — ELECTRIC PLANTS — Shipping Point Sheboygan, Wis.

ALSO MANUFACTURERS OF KOHLER PLUMBING FIXTURES

Kohler Co., Kohler, Wis. O. & G. J. 9-5-29

Gentlemen: Please send the Kohler Electric Plant catalogue.

Name..... Street.....

City..... State.....

Use in which interested .....

These Drillers *Enthusiastic* about Job They Got *with* OILMAX

ON Wright No. 2 in the Valley Center pool, the 8-inch casing was ready to be cemented. But the drillers sought to avert the 6 to 10-day delay *inevitable* when ordinary cement is used — they wanted to *keep on going* with as little lost time as possible.

So they used Oilmax, a *quick-hardening* Portland Cement, *specially-processed* for cementing oil wells. The casing was set on February 12th. Drilling was resumed on February 14th—*just 48 hours later!*

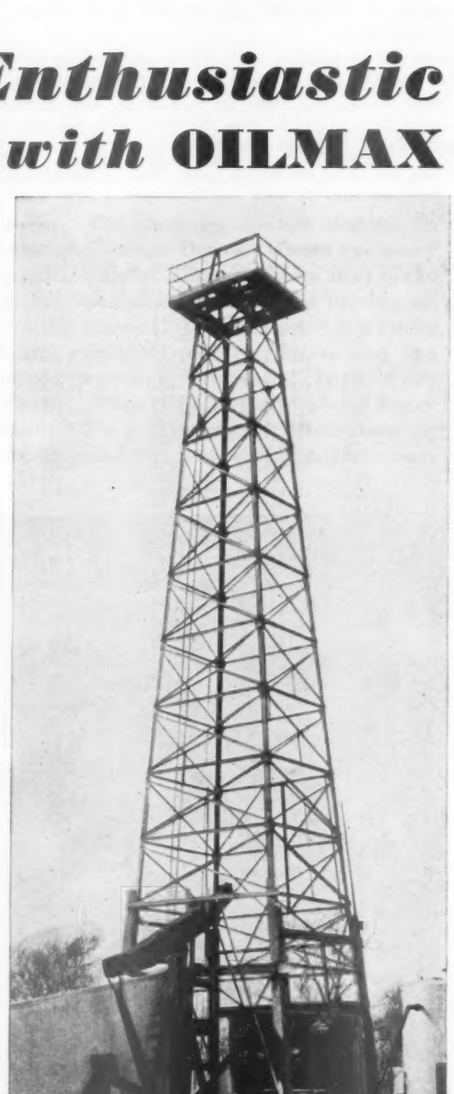
Such speedy time and money-saving results account for the enthusiasm of drillers everywhere for Oilmax. *And why not?* Oilmax gets as hard in 24 hours as ordinary cement in 10 days . . . sets up promptly under adverse conditions . . . slips quickly thru pumps . . . requires no admixtures whatever!

Read these Test Reports—

Recent tests on samples of Oilmax Cement taken at random from actual shipments showed average compressive strengths with 40% water as follows: 3,469 lbs. per sq. in. at 24 hours; 5,111 lbs. per sq. in. at 48 hours; 9,466 lbs. per sq. in. at 28 days!

Test Oilmax out for yourself on your *next* job. Whether it's a casing or a bad-hole condition, you'll *save time and money.* Packed in sturdy 5-ply paper bags, Oilmax is available thru dealers.

Produced ONLY by
ASH GROVE LIME & PORTLAND CEMENT CO.
Founded in 1882
KANSAS CITY, MO. OMAHA, NEBR.
District Sales Office: OKLAHOMA CITY, OKLA. Phone Maple 0642.



Photograph shows Wright No. 2 well in the Valley Center pool. Oilmax Cement was used in setting casings.

OILMAX CEMENT

2917

FOR CEMENTING OIL WELLS

LOUISIANA-ARKANSAS

(Continued from Page 57)

vey and last week it moved the first oil from No. 1 Pickering in the P. W. Harvey Survey, completed last November making 15 bbls. initial from 3,382 feet. The company is moving an average of 65 bbls. daily, the first production it has taken out of Shelby County, though The Texas Company got considerable oil there eight or nine years ago and Magnolia Petroleum Co. also has a few producers. Benedum & Trees Oil Co. made location for the first of the two wells it is to drill on its 12,000-acre block at Paxton, No. 1 Pickering, 300 feet south and west NE cor. Lot 20, D. T. F. Yordt Survey.

While two wells in the Shreveport district are below the one-mile level, the Arkansas Valley area of north Arkansas also has its "mile-deep" well, Blackwell Oil & Gas Co.'s No. 1 Wyver in Section 21-9-25, Johnson County, drilling at 5,285 feet. In Washington County O'Hara & Shetterly are underreaming at 150 feet on No. 1 Boyd in the SE cor. Section 12-16-32, 4 miles northwest of Fayetteville. They started drilling a year or more ago and were shut down at 145 feet until recently. The location is about in the center of a 3,000-acre block in the northern part of Township 16 and southern part of Township 17-32.

Permit issued for Phillips Petroleum Co. and F. S. Craver's well in Madison County, 30 miles east of Fayetteville, shows it on the Skinner farm in the NE cor. NE SW Section 11-14-28. It was scheduled to start drilling August 28. In White County, in the eastern end of the belt that is attracting such a great leasing play, Letona Syndicate's No. 1 Letona, Section 35-9-8, is drilling hard dark sandy shale at 3,480 feet, and it is reported that Craver & Green, who own several blocks scattered through the belt, will start a well within 60 days on one of the Cleburne County blocks near Heber Springs. Leasing appears to have quieted down in that part of the belt during recent weeks, though several companies have geologists there and royalty buyers are actively skirmishing and abstractors have little leisure.

Second Operation Under Way

Location for a second operation to get under way in Little River County in the southwestern corner of the State, was made the last week by A. L. Buck and others who have derrick up for No. 1 Greason in the NW NW Section 25-12-32 between the Grotte and others' No. 1 Allen in Section 31-21-31 and the Texas state line. The other is McDonald & Shaw's No. 1 W. E. Black, Section 12-13-28, east of Ashdown, drilling below 800 feet.

S. C. Fullilove and others of Shreveport are trying to interest three companies in a proposition they have at Wilmot, Little River County around which town they have 6,000 acres. They plan to drill three wells to the Blossom at around 900 feet. After studying the logs and determining which is highest on structure they plan to drill it to the Trinity.

The T. T. Word location in Columbia County, referred to last week as unidentified, is No. 1 Coneland, 300 feet south and west NE cor. SE NW Section 31-19-19, and rig is being moved in. W. M. Brown is promoting a test on 5,000 acres of fee and leased stuff in Township 16-11 and 12 Ashley County to go 3,000 feet. Location is near Mist settlement.

After being out of the picture for a year or two the El Dorado discovery pool came back this week with Weisinger and others' completion of No. 7 Goodwin, Section 31-17-15, pumping 150 bbls., 90 per cent salt water, from 2,185 feet. W. M. Coates has sold quarter interests in No. 1 McDuffie, Section 32-19-17, to Standard Oil Co. and The Texas Company and as soon as he finishes some title work will drill in. The well cored 4½ feet of sand showing oil at 4,057 feet and has been shut down for two weeks. Numerous independents have played this well but the Standard and Texas are the first of the majors to get interested in it to the extent of spending any money.

Two miles north of it Frank Foster has derrick up for a well in the center of Section 19-19-17 for a 3,000-foot test on a 1,000-acre block. In the Moro Bay district east of Champagnolle, Schaffer Oil & Refining Co., Skelly Oil Co. and Phillips Petroleum Co. are buying what loose acreage they can find available in Township 17-12 and Joe Hurley is getting ready to drill his block in the same area, probably in Section 5-17-12. He plans to go to the Nacatoch which, if high, will be followed by a test to the Champagnolle red beds pay. Joe Modisette and others made a drill stem test on No. 1 Union Sawmill, Section 1-18-14, 3 or 4 miles south of Champagnolle production and got 12 fourbles of salt water from 3 feet of sandy shale at 2,239-42 feet. Ohio Oil Co. cored salt water sand at 3,002 feet on No. 1 Stout Lumber Co., Account 2 in Section 30-16-13.

Second Commercial Well

Since approximately 200,000 feet of gas daily is being taken from Amory Petroleum Co.'s No. 2 Carter, Section 7-17-13 Monroe County, it may be listed as Mississippi's second commercial well. It is an offset to the discovery well and is producing from 2,410-25 feet, total depth 2,592 feet. Ben W. White and others' No. 1 Shannon, Section 36-10-4 Claiborne County, is abandoned at 2,004 feet.

Amerada Petroleum Co. has taken 28,000 acres, practically solid, centering on Yazoo City in the county of that name, and plans a deep test, probably 4,000 feet, to be drilled a short distance northeast of town and it is expected to take over more of the 175,000 acres J. P. Evans and others of Shreveport have been blocking. Location for the well on the block in Township 12-2w will be on a seismograph high.

In Hinds County Home Oil & Gas Co. (Cleve Love and others) Stewart Gammill and Ganzell have about come to terms for a 3,500-foot well in the NW cor. Section 13-5-1e. All but $3,500 of $10,000 required by the Home company has been raised, Gulf Refining Co. contributing $3,000 dry hole money and taking 200 acres, Pure Oil Co. has put up $1,500 and Lion Oil Refining Co. $1,000.

Meridian Natural Gas Co. topped red shale at 2,024 feet on No. 1 Hauser, Section 33-8-18 Lauderdale County and Philp Brothers' No. 1 James, Section 20-11-5 Yalobusha County, is shut down at 2,950 feet waiting for roller bit cones to drill a hard sand rock in the Mississippian or Devonian. El Dorado Oil Co.'s No. 1 Dornbush, Section 8-18-5, Warren County, is shut down in sand at 2,080 feet waiting for testing tool. Louisiana Oil Refining Co. has completed its fourteenth structure test in Holmes County in the vicinity of West, checking on a glauconitic sand in the Winona member of the Lisbon (Claiborne) at around 120 feet.

Gulf Refining Co. is reported to have completed the first of its core tests on the Hatchitigbee anticline in southeastern Alabama, No. 1 Thornton, Section 21-9-2e Choctaw County, and to have moved a mile east into Section 22 for its second such test.

CALIFORNIA FIELDS

(Continued from Page 62)

The Bowles Oil Co. has a rig going up for its No. 1 Buttram in Section 24-27-28.

The Shell Oil Co. is bailing about 90 bbls. of fluid, oil, sand and emulsion every eight hours from its No. 1 Buchner in Section 20-26-28. The hole is down 1,617 feet and the 6¼-inch pipe is set at 1,592 feet. The Shell's No. 1 Knapp in Section 28-26-28 is being cleaned out at 2,265 feet. The Pacific Western Oil Co.'s No. 3 King has reached a depth of 1,553 feet and No. 4 Rench is drilling ahead at 990 feet. Both wells are in Section 22-27-28. The Union Oil Co. is rigging up in its No. 6 S. & M. in Section 4-27-28, No. 4 is drilling ahead at 1,100 feet on the Tribe lease in Section 28-27-28, and the company is building roads for its No. 5 Tribe in this section.

In the Kern River Field the Bishop Corp. completed No. 1 Fano last week in Section 23-28-27. This well was completed at a depth of 1,980 feet doing 180 bbls. of clean 19 gravity oil. There was little excitement in this district from a development standpoint. Two new rigs were erected, one by the Chanslor-Canfield Midway Oil Co., No. 28 in Section 23-28-27, and the Richfield Oil Co.'s No. 16 in Section 22-28-27.

The General Petroleum Corp.'s No. 32 Young in Section 14-28-27, at present 1,995 feet, will be drilled out to 1,740 feet and tested. The Richfield Oil Co. is drilling ahead in its No. 9 in Section 22-28-27 at 1,960 feet.

In the Fruitvale district of Kern County the Mohawk Oil Co. is rigging up for its No. 6 in Section 27-29-27 and the Shell Oil Co. is also erecting rig for its No. 1 Brackenbury in the same section. The Western Gulf has abandoned its No. 1-D in Section 25-29-27 at 5,262 feet. The company is drilling ahead in a hard sand in its No. 8-B K. C. L. in Section 22-29-27 and the well is at present down to a depth of 7,723 feet.

Drilling activities on the Big Four Drilling Company's No. 1 in Section 29-23-27, in Tulare County, have come to a temporary cessation because of a fishing job. The well is down 4,331 feet with the 4¼-inch casing at 4,200 feet. The Petroleum Securities' prospect hole is down 50 feet with the 18-inch casing standing cemented at that depth. The hole is designated as the Vedder-Hart No. 1 and is located on Section 22-24-27. The Kings-Tulare Syndicate's hole in Section 19-21-23 is standing idle at a depth of 5,785 feet with the 4¾-inch casing at 5,674 feet. Another company active in this district is the Bruce Frame Co., No. 1 Frame Pixley having its rig up in Section 8-23-20.

Kettleman Hills

The Kettleman Hills Field of Kings County is progressing satisfactorily and it should come in for attention during the next few weeks. There are two wells producing steadily, about six or seven more nearing the production stage in the north dome. Construction of an absorption plant is reported under way to take care of the future production from No. 12 Elliott of the Continental Oil Co. This well is drilling ahead in a hard gray sand at 6,825 feet. The Standard Oil Co. is testing for water in the top zone in its well, No. 41, in Section 3-22-17, which is now down 6,445 feet. The company's No. 81 in Section 11-22-17, has increased its output since its completion a month or so ago at 6,673 feet. The initial production of this project was about 700 bbls. of 38.9 gravity oil daily. This has increased to 1,000 bbls. daily and the well is also doing about 22,000,000 feet of gas per day. The Standard has temporarily solved its gas problem as the absorption plant near No. 81 is utilizing its entire flow and is making 22,000 gallons of casinghead gasoline daily. The General Petroleum Corp. is sidetracking down No. 2 Oschner in Section 26-22-18 at 6,841 feet. About 110 feet of 3-inch drill pipe remains frozen in the hole with the top at 6,965 feet.

The Shell Oil Co.'s No. 1 Armstrong in Section 8-22-18, which blew in over a month ago at 6,753 feet and was killed to deepen, is drilling ahead below 6,977 feet in a hard gray sand formation. Shell's No. 1 Fay in the middle dome is idle at 5,010 feet. In No. 2-13 Elliott of the Marland Oil Co. the 8⅝-inch casing was cemented at 6,100 feet. This well is in Section 30-21-17. The Milham Exploration Co.'s No. 1 Kennedy in Section 28-21-17, is standing recemented at 7,263 feet, while the Ohio Oil Co. is drilling ahead in a brown shale at 6,742 feet in its No. 1 Smith. The Bolsa Chica Oil Co. has reached a depth of 6,038 feet in its No. 1 Ferguson, the formation being a hard sand with streaks of brown shale.

CANADIAN FIELDS

(Continued from Page 54)

1-20-3w5, is reported making new hole in the lime with slightly increased gas flow which intermittently blows naphtha over the derrick. Calmont's No. 3, same

Write for location of stocks

Macwhyte Company
2916 Fourteenth Avenue
Kenosha, Wisconsin

LSD, is reported spudding. Regent Oil Co.'s No. 2, LSD 16, same section, is reported drilling around 2,200 feet. Regent's No. 3, same LSD, is around 1,000 feet and drilling. Regent's No. 4, same LSD, is rigging up.

Okalta Oils' No. 2, LSD 8, Section 1-20-3w5, is reported drilling below 3,460 feet and carrying 8¼-inch casing. Okalta's No. 3, LSD 9, is drilling for 12½-inch. Okalta's No. 4, LSD 8, is drilling below 800 feet. Okalta's No. 5, LSD 7, is drilling below 250 feet.

British Dominion Oil Development Corp.'s No. 2, LSD 6, Section 12-20-3w5, is at 4,950 feet and has been blowing light crude, making as much as 200 bbls. at a time. With 4,000 feet of oil in the hole a swabbing test is being made. Illinois-Alberta Oils' No. 2, LSD 14, same section, is redrilling a hard stratum of the lime at 3,637 feet, after losing tools at 3,678 feet. Widney Petroleums' No. 1, LSD 11, same section, is drilling at 2,800 feet. New McDougall-Segur Oil Co. is moving rig from No. 1, LSD 14, Section 12-20-3w5, which has been abandoned, to a new location in the same LSD, where No. 4 will be drilled to the deep lime. No. 3, same LSD, will be left standing at 3,370 feet till No. 4 is finished.

Below 5,000 Feet

Sentinel Oil Co.'s No. 1, Section 8-20-2w5, is making new hole below 5,000 feet.

In the South Field, Calmont Oils' No. 2, LSD 11, Section 20-19-2w5, is drilling at 3,650 feet and through the McDougall-Segur sands. Calmont's No. 4, same LSD, is drilling at 3,177 feet, and No. 6, same LSD, at 2,855 feet.

Freehold Oil Corp.'s No. 2, LSD 8, Section 20-19-2w5, is drilling below 3,310 feet. Alberta Pacific Consolidated's No. 1, LSD 5, same section, is drilling at 2,670 feet, and No. 2 at 2,010 feet. East Crest Oil Co.'s No. 1, LSD 5-6, Section 16-19-2w5, has resumed drilling after cementing caving at 4,214 feet. East Crest's No. 2, LSD 4, same section, is resuming at 250 feet after cementing casing.

Aerolite Oil Corp.'s No. 1, LSD 4, Section 3-19-2w5, is rigged up ready to spud in.

Homestead Oil Co.'s No. 1, LSD 5, Section 16-19-2w5, is at 3,480 feet and fishing for a lost bit. The well has about 1,000,000 feet of wet gas and traces of oil. It is asserted the test has passed through the Dakota sands and Fernie shales without going through the Kootenays, and that recent markers indicate it is close to the deep lime. Miracle Oils' No. 1, LSD 11, Section 4-19-2w5, is drilling at 2,720 feet, after getting the Dakota sand at 2,550 feet. Sunlight Oils' No. 1, LSD 2, Section 4-19-2w5, is drilling at 2,680 feet. Mercury Oils' No. 1, LSD 13, Section 4-19-2w5, is drilling at 2,842 feet, after running casing at 2,720 feet; No. 2, LSD 12, same section, is drilling at 900 feet. Hylo Oils' No. 1, LSD 12, same section, is drilling below 1,500 feet.

Commonwealth Petroleums' No. 2, LSD 7, Section 9-19-2w5, is drilling at 3,280 feet, and expects the deep lime around 4,180 feet. Commonwealth's No. 3 has been spotted in LSD 5, same section, 250 feet north of No. 2.

Getting Oil While Drilling

In the north Turner Valley area, Sponer Oils' No. 2, Section 24-20-3w5, is drilling 885 feet in the lime at 5,960 feet, with recovery of about 50 bbls. a day while drilling. Dome Oils' No. 1, same section, is drilling in the lower Dakotas at 3,750 feet. Madison Oils' No. 3, LSD 7, same section, is reported starting on derrick and hauling machinery. Vimy Oils' No. 1, same LSD, is underreaming to lower 13½-inch casing at 1,930 feet.

Model Oils' No. 1, LSD 8, Section 22-20-3w5, is drilling below 5,235 feet with 1,200 feet of oil in the hole, bailing having reduced the level little The crude comes through a fault from the Dalhousie sands and drilling is continuing to that horizon to make the well a commercial producer. Turner Basin Oils' No. 3, LSD 2, Section 27-20-3w5, is resuming at 2,080 feet after running casing to the bottom.

Dalfin Petroleums' No. 1, LSD 12, Section 34-20-3w5, is testing for water at 537 feet. Vanalta Oils' No. 2, same section, has spudded in. Calmont Oils' No. 5, LSD 3, same section, is drilling at 2,550 feet, after entering the Dakota sand at 2,210 feet.

Invader Oils' No. 1, LSD 10, Section 9-21-3w5, is drilling below 1,452 feet, after encountering a gas flow, estimated at 2,000,000 feet a day, at 1,392 feet. Casing was run to 1,400 feet. The gas comes from a grit bed immediately overlying the Dakota sand, and is the shallowest show encountered in the north end of the field. Weymarn Petroleums' New Black Diamond No. 1, LSD 1, Section 3-20-3w5, has resumed drilling after cementing 13⅜-inch casing at 2,250 feet. Angus Oils' No. 1, LSD 5, Section 33-19-3w5, is reported drilling below 500 feet. Outwest Petroleums' No. 1, LSD 5, Section 35-19-3w5, is cementing casing at 2,940 feet after a slight fishing job.

Crew Fighting Fires

On the Rickert structure, Indian Oils' Rickert No. 1, LSD 7, Section 24-19-6w5, is shut down at 1,050 feet, the crew having been requisitioned to fight forest fires in the Bow River forest reserve.

On the Waite Valley structure, Richfield Petroleums' No. 1, NW Section 35-20-3w5, is drilling at 2,100 feet after a shutdown due to forest fires. Gibraltar Oils' No. 1, LSD 4, Section 18-20-2w5, is drilling below 100 feet. Brock Oils' No. 1, LSD 2, Section 35-21-4w5, is drilling below 300 feet. Innerfold Oils' No. 1 is drilling around 300 feet.

In the Moose Mountain district, Signal Hill Oil Co.'s No. 2, LSD 9, Section 34-23-5w5, is drilling below 3,310 feet after running casing to 3,300 feet. Elbow Oils' No. 1, LSD 11, Section 35-22-5w5, is drilling around 2,500 feet.

In the Morley Reserve area, Wabash Oils' No. 1 is drilling below 2,530 feet. It is 1,047 feet in the lime and has encountered a light buff formation in the limestone similar to that overlying the big production in the Turner Valley. In the latter field, however, the buff limestone is usually well within 200 feet of the top of the Madison. Norcon Oil Co.'s No. 1 is drilling 100 feet in the Dakotas at 1,255 feet. Gold Coin Oils' No. 2 is fishing at 1,045 feet.

In the Pincher Creek district, Weymarn Petroleum's Mount Royal No. 1, LSD 4, Section 7-61-4w5, is straightening a crooked hole.

In the Monarch district northwest of Calgary, W. L. Howell is reported to have filed on 1,000 acres along the structure, including the site of the old Mount Stephen Oil & Gas Co.'s No. 1 well. This test, drilled at the time of the 1914 boom, got around 500,000 feet of gas. The Mount Stephen location was in Township 32-7w5 and the test had not been carried to conclusive depths when drilling stopped.

Skiff Field

In the Skiff Field, the detailed report by William Calder, government petroleum technologist, on Devenish-Imperial's No. 3, LSD 4, Section 27-5-14w4, has been made public. The report, compiled after a careful test of production, is in part as follows:

"The average net oil production for the test period amounted to 37.868 bbls. per 24 hours. Conclusive evidence was obtained to prove that this amount would not be exceeded. The appearance of the oil and the apparent lowness of liquid in the well—evident under the long stroke pumping by the frequent pumping off and stoppage of flow—tend to indicate that this well is not located on the main body of oil. Further, that the oil may have migrated from other horizons or a point some distance away. As regards the amount of water present with the oil, this excessive quantity (7.3 per cent) may be migrating from No. 1 well distant approximately 950 feet. It would, therefore, appear advisable that the latter be satisfactorily isolated by cementation and tamping. It would also appear that, if production is not continuous from No. 3, the water will eventually fill the well and drown out all oil. It is therefore suggested that the operator be advised to pump off the head of oil and water several times weekly."

The well is now being pumped, the production being used for drilling fuel at Dauntless Oils' No. 1, LSD 9, Section 36-6-15w4. The latter is drilling below 1,830 feet and taking cores showing light crude out of a shale-limestone formation not encountered in the Devenish tests to the southeast. Lion's Gate Oil Co.'s No. 1, LSD 1, Section 33-6-15w4, has derrick standing.

On the Beaver Dome, Madison Oils' No. 2, LSD 10, Section 24-2-11w4, is reported drilling at 1,800 feet. In the Milk River area, Capitol Oil & Gas Co.'s No. 1-A, LSD 16, Section 32-1-12w4, is drilling at 1,953 feet after passing through a second gas sand at 1,800 feet. Commonwelath Petroleums' No. 1, LSD 9, Section 9-3-15w4, is drilling below 2,171 feet. On the Rogers-Imperial structure, Range Oil & Gas Co.'s No. 2, LSD 6, Section 21-1-11w4, has cemented off water at 2,090 feet.

West of Coutts, Vanalta Oils' No. 1, SW Section 4-1-16w4, is reported drilling in the Benton shales at 1,870 feet. On the Montana end of the Red Coulee structure, Monalta Oil Co.'s No. 2 is drilling below 1,800 feet.

In the Cypress Hills district, Eagle Butte Oil Co.'s No. 1, LSD 3, Section 31-7-4w4, is reported below the Kootenay coal horizon at 3,950 feet and making slow headway.

In the Taber district, the Cole English Oil Syndicate's No. 1 Taber, SW Section 11-10-17w4, under direction of Campbell Hunter, has 125-foot derrick up and is moving drilling equipment to location. It is reported the syndicate program calls for a series of six wells.

Hudson's Bay-Marland Oil Co.'s Champion No. 1, LSD 2, Section 9-16-23w4, is reported underreaming at 2,250 feet. Hudson's May-Marland's No. 1 Lomond, Section 23-17-18w4, is around 1,000 feet.

Acadia Valley

In the Acadia Valley, Fuego Oils' No. 1, Section 35-25-4w4, has sidetracked the old casing and run 6-inch casing to the bottom of the old hole at 2,930 feet. A gas flow, estimated around 5,000,000 feet, has been met, with some traces of oil.

In the Ribstone Field, eastern Alberta, Meridian Oils' No. 1, LSD 1, Section 16-45-1w4, is reported pumping day and night and making around 50 bbls. Different pumping equipment will be installed later which is expected to get larger production. Meridian's No. 2 has been spotted in the same LSD and standard tools have been ordered for two tests. Meridian's No. 3 will be drilled jointly by Meridian Oils, Ltd., and Imperial Oil, Ltd.; location has been made in Section 16-45-1w4. London-Ribstone Syndicate's No. 2, LSD 2, Section 22-43-3w4, is rigged up ready to spud in. Oxville Oil & Gas Co.'s No. 1, Section 10-45-2w, has derrick up and is installing machinery. Ribstone Oils' No. 2, LSD 5, Section 25-46-1w4, is reported shut down at 3,230 feet.

In the Wainwright Field, east central Alberta, Admiral Oils' No. 1, LSD 16, Section 36-44-7w4, is reported drilling 12 feet in the lime at 2,400 feet. This test cored a promising oil sand at 2,073 feet with good saturation and satisfactory texture, but water trouble necessitated deeper drilling. The test passed through five sands between 2,073 and 2,732 feet but it was decided to drill deeper.

Beaumont Oils' No. 1, Section 2-45-7w4, is setting casing at 2,183 feet after coring a 9-foot sand. Bethwain Oils' No. 1, Section 6-45-6w4, is drilling out cement around 700 feet. Duluth Syndicate's No. 1, LSD 8, Section 29-48-10w4, is drilling.

Fabyan Petroleums' No. 1, LSD 8, Section 24-45-8w4, is at 2,138 feet and setting casing, after coring a 15-foot sand. An indicated flush production of 500 bbls., with 30,000,000 feet of gas, has been reported.

Wainwell Oils' No. 1, LSD 9, Section 36-44-7w4, is at 2,215 feet and preparing to run casing to the second sand. Wainwell's No. 2, LSD 15, Section 36-44-7w4, has a gas production, estimated around 40,000,000 feet a day, at 2,080 feet; this is largely shut in, but gas is being sold to Admiral Oils, Lloyd's Petroleums and Bethwain Oils for drilling.

Ontario Fields

In the Ontario fields, Ajax Oil & Gas Co.'s No. 5, Dover East Township, Kent County, is reported drilling 100 feet in the Trenton limestone without a show. Union Natural Gas Co.'s No. 22, Dover West Township, is drilling around 1,800 feet. Acme Oil & Gas Co.'s No. 1 is drilling in Dover Township north of Ajax's No. 4 producer. Olga Gas & Oil Co., Ltd., recently organized with head office at Toronto, is arranging to start a test in Dover East close to Ajax's No. 5. E. P. Rowe is consulting geologist for the Olga company.

In Howard Township, Kent County, Union Natural Gas Co.'s No. 2 Ridgetown test near the town line has been abandoned. In Lambton County Union Natural Gas Co.'s No. 42 has been located at the east end of the Dawn Field, in Lot 24, Concession 5, Euphemia Township. Union's No. 41, Dawn Township, is running casing at about 1,100 feet.

In eastern Ontario, Henry McConnell is drilling a wildcat test in Prince Edward County, 5 miles south of Milford, at the lower end of the Starks farm. Some years ago a water well on the Starks farm encountered gas at 40 feet depth.

James Bay Basin Oil Co. of Cochrane, Ontario, is moving camp supplies and hydraulic pressure drilling equipment from Smoky Falls to its acreage on Grey Goose Islands in the Moose River area of northern Ontario. W. Tees Curran, president of the company, accompanied by several directors, have gone north with the equipment. Operations on No. 1 test will start early in September. Smith & Travers are already drilling for the provincial government at Blacksmith Rapids on the Abitibi River.

KANSAS FIELDS

(Continued from Page 52)

cor. NW NW Section 30-21-3, is dry and abandoned at 3,199 feet.

Marion County

Marshall & Beck made location for No. 1 Higgins, NE cor. Section 33-19-5. Merriman & Shidell's No. 1 Lindberg, SW cor. NE Section 32-18-2w, is dry and abandoned at 3,456 feet.

McPherson County

Transcontinental Oil Co. is moving the rig in for No. 1 Algers, NE cor. SW Section 1-19-5w. Milmac and others made location for No. 1 Decker, NW cor. Section 11-20-3w. Washabaugh and others' No. 1 Voshell, NE cor. Section 9-21-3w, has been completed for 30 bbls. in Viola lime 3,301-04 feet.

Rice County

Boucher Oil Co. made location for No. 1 Boy, SW cor. Section 16-21-10w.

Sedgwick County

J. S. Cosden's No. 1 Dewes, NE cor. NW SW Section 1-26-1w, Valley Center Pool, is rigging up. Shell Petroleum Corp. is moving the tools in for No. 2 Brown, SW cor. NW SE SW, Section 15-26-2, Greenwich Townsite Pool.

Skelly Oil Co. and Davis' No. 12 Wilson, NW cor. SE NE Section 1-26-1w, Valley Center Pool, has been completed for 124 bbls. in sand 3,379-81 feet. Bu-Vi-Bar Petroleum Corp.'s No. 5 Wright, NE cor. SE NE Section 12-26-1w, has been completed for 1,400 bbls. in sand 3,-355-64 feet. Aladdin Oil Co.'s No. 3 Benningfield, SW cor. NW SW, Section 6-26-1, made 40 bbls. at 2,605 feet. Bu Vi Bar Petroleum Corp.'s No. 9 Shawver, SE cor. NW NW Section 7-26-1, made 294 bbls. in sand 3,365-70 feet. Barnsdall Oil Co.'s No. 1 Kuske, NE cor. SE Section 24-25-1, has been abandoned at 3,700 feet. Shell Petroleum Corp.'s No. 2 Community, NE cor. SW SW, Section 15-26-2, Greenwich Townsite Pool, made 336 bbls. at 2,927 feet. Tidal Oil Co.'s No. 1 Duncan, SW cor. SE, Section 31-25-2, has been abandoned at 3,434 feet.

Sumner County

Slick, Pryor & Lockhart made location for No. 1 Peasel, NW cor. Section 33-31-1w. Champlin Oil & Refining Co.'s No. 4-B Latta, SW cor. NW SE NW, Section 9-30-2w, is drilling deeper at 3,364 feet.

Woodson County

Fields and others' No. 1 Northmyer, NE cor. SW Section 30-25-14, is dry and abandoned at 1,499 feet.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 56)

Humble & Valley's No. 4 Austin College ..... Pumping 50 bbls. 3,482 ft.
Humble & Valley's No. 1 Graneau ..... Derrick.
Humble & Valley's No. 3 Bellville School ..... Derrick.
Humble & Valley's No. 4 Bellevville School ..... Location.
Humble & Valley's No. 2 Woodley ..... Comp. flowing 400 bbls. oil 3,448 ft.
Humble & Valley's No. 3 Woodley ..... Derrick.
Humble & Valley's No. 2-A Grawunder ..... Cemented casing to test oil sand 3,335 ft.
Humble & Valley's No. 3-B Grawunder ..... Drlg. shale 1,092 ft.
Humble & Valley's No. 4-B Grawunder ..... Location.
Humble & Valley's No. 2-C Grawunder ..... Drlg. 1,212 ft.
Humble & Valley's No. 3 Grawunder ..... Location.
Humble & Valey's No. 3 Reese ..... Swabbing 3,516 ft.
Humble & Valley's No. 2 Sherrill ..... Cemented casing to test oil sand 3,306 ft.
Humble & Valley's No. 2 Beal ..... Drlg. sticky shale 3,250 ft.
Humble & Valley's No. 3 Payne ..... Drlg. sand and shale 2,658 ft.
Humble & Valley's No. 4 Urban ..... Losing returns 929 ft.
Humble & Valley's No. 5 Urban ..... Location.
Humble & Valley's No. 4 Saunders ..... Drlg. 212 ft.
Humble & Valley's No. 3 Mueller ..... Drlg. shale 700 ft.
Humble & Valley's No. 4 Mueller ..... Derrick.
Humble & Valley's No. 5 Mueller ..... Rig.
Humble & Valley's No. 2 Helmuth ..... Derrick.
Humble & Valley's No. 1 Diemer ..... Derrick.
Humble & Valley's No. 3-A Bracey ..... Rig.
Humble & Valley's No. 2 J. W. Wilson ..... Rig.
Humble & Valley's No. 1 McCalfland ..... Location.

DE WALT—FORT BEND COUNTY

Humble Oil & Refg. Co.'s No. 5 Nelson ..... Drlg. sand showing oil 3,624 ft.
Humble Oil & Refg. Co.'s No. 5 Camp ..... Comp. flowing 400 bbls. oil 3,590 ft.
Humble Oil & Refg. Co.'s No. 7 Brazos ..... Drlg. sidetracked hole 2,551 ft.
Humble Oil & Refg. Co.'s No. 8 Brazos ..... Rig.
Humble Oil & Refg. Co.'s No. 9 Brazos ..... Drlg. shale and lime 2,553 ft.
Humble Oil & Refg. Co.'s No. 3 Hamner fee ..... Location.
Humble Oil & Refg. Co.'s No. 6 Hamner fee ..... Waiting cement to set 1,239 ft.
Humble Oil & Refg. Co.'s No. 2-A Bankers Mortgage ..... Drlg. sand and shale 3,267 ft.
Humble Oil & Refg. Co.'s No. 9 Sugarland ..... Cem. casing to test oil sand 3,609 ft.
Humble Oil & Refg. Co.'s No. 1 Hagenson ..... Rig.
Humble Oil & Refg. Co.'s No. 3 Deatherage ..... Rig.

HUMBLE—HARRIS COUNTY

Continental Oil Co.'s No. 1 Wagner ..... Drlg. gumbo 2,350 ft.
Humble Oil & Refg. Co.'s No. 3 Williams ..... Set 358 ft. screen; flow 500 bbls. oil on half-inch choke 4,161 ft.
Humble Oil & Refg. Co.'s No. 4 Williams ..... Drlg. gumbo 1,795 ft.
Humble Oil & Refg. Co.'s No. 5 Williams ..... Rig.
Humble Oil & Refg. Co.'s No. 1 Glass, south ..... Sand and shale showing oil 5,015 ft.; cem. 9⅝-in. casing 4,980 ft.
Marland Oil Co.'s No. 1 Cezeaux, south side ..... To pump 4,520 ft.
Navarro Oil Co.'s No. 1 La. Oil Refg. Corp. ..... Drlg. gumbo 980 ft.
Harvey Smith et al's No. 1 Rosenthall, north side ..... Rigging up to pump 4,205 ft.
South Texas Petroleum Co.'s No. 10 Morris, south side ..... Drlg. gumbo 1,512 ft.
South Texas Petroleum Co.'s No. 11 Morris, south side ..... Rig.
South Texas Petroleum Co.'s No. 1 Lee, south flank ..... Drlg. 421 ft.
Sun Oil Co.'s No. 47 River, north side ..... Drlg. shale 5,800 ft.
The Texas Company's No. 265 Landslide, south ..... Drlg. 5,443 ft.
The Texas Company's No. 266 Landslide ..... Drlg. sticky shale 4,960 ft.
The Texas Company's No. 267 Landslide, south ..... Drlg. sand and boulders 420 ft.
The Texas Company's No. 268 Landslide, south ..... Rig.
The Texas Company's No. 269 Landslide, south ..... Derrick.
The Texas Company's No. 23 House ..... Drlg. gumbo and lime 2,312 ft.
West Production Co.'s No. 1 Foster ..... Drlg. gumbo 2,536 ft.

BLUE RIDGE—FORT BEND COUNTY

Cunningham Production Co.'s No. 2 Blakely (workover) ..... To deepen.
Gulf Production Co.'s No. 16 Luscher ..... Drlg. gummy shale 3,748 ft.
Moody Corp.'s No. 8 West-Schenck ..... Dry and abandoned 5,138 ft.
Sinclair Oil & Gas Co.'s No. 3 Davison (workover) ..... Pulling liner to deepen 4,632 ft.
South Texas Petroleum Co.'s No. 1 Lee (workover) ..... Drlg. 4,047 ft.

PIERCE JUNCTION—HARRIS COUNTY

Abercrombie & Harrison's No. 1 Ritter ..... Testing oil sand 4,442 ft.
Anderson & Plummer's No. 5 Whitehead, old well ..... To sidetrack 3,000 ft.
Gulf Production Co.'s No. 23 Taylor (workover) ..... Drlg. 5,131 ft.
Gulf Production Co.'s No. 29 Taylor (workover) ..... Set 3 joints screen 4,761 ft.; flow 1,950 bbls. oil.
Gulf Production Co.'s No. 30 Taylor, east ..... Tested salt water 3,940 ft.; drill stuck; sidetracking.
Navarro Oil Co.'s No. 4-B Cain ..... Comp. 1,000 bbls. fluid, 80 per cent b.s. and water, 5,054 ft.
Rio Bravo Oil Co.'s No. 11 B. Settegast ..... Drlg. gumbo and lime 3,034 ft.
Rio Bravo Oil Co.'s No. 7-A Settegast (workover) ..... Reset screen 4,240 ft.
Rio Bravo Oil Co.'s No. 14-A Settegast, west ..... Resumed drilling after shut-down 5,067 ft.
Saxet Gas Co.'s No. 2 Herman estate, southwest ..... Drlg. gumbo 2,600 ft.
Saxet Gas Co.'s No. 4 Herman (southwest) ..... Drlg. hard lime and sand 3,150 ft.
Saxet Gas Co.'s No. 5 Herman (southwest) ..... Derrick.
J. F. Barron's No. 3 Fitzsimmons ..... Derrick.
Shaw & Texas Exploration Co.'s No. 2-F Fitzsimmons ..... Derrick.
T. G. Shaw's No. 1 Dooley ..... Total depth 5,661 ft. in oil sand; sidetracking 5,340 ft.
Superior Oil Corp.'s No. 5-B Settegast (workover) ..... To deepen.

LIBERTY—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 3 Groggan ..... Comp. flowing 700 bbls. oil 3,468 ft.
Empire Gas & Fuel Co.'s No. 4 Groggan ..... Drlg. 2,641 ft.
Empire Gas & Fuel Co.'s No. 5 Groggan ..... Drlg. 2,532 ft.
Navarro Oil Co.'s No. 2 Gulf ..... Abandoned 1,869 ft.
Sun Oil Co.'s No. 47 Mitchell ..... Abandoned in salt 3,097 ft.
Sun Oil Co.'s No. 48 Mitchell ..... Drlg. 2,589 ft.
Sun Oil Co.'s No. 49 Mitchell ..... Rig.

HULL—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 27 Barngrover, old well ..... Drlg. 3,599 ft.
Gulf Production Co.'s No. 48 Phoenix (workover) ..... Pumping 100 bbls. fluid, 30 per cent water 3,248 ft.
Gulf Production Co.'s No. 52 Phoenix, workover ..... To deepen.
Houston Production Co.'s No. 13 Barngrover ..... Drlg. 1,034 ft.
Humble Oil & Refg. Co.'s No. 11 Hooks-Spell ..... Drlg. gumbo 3,660 ft.
Republic Production Co.'s No. 35 Dolbear (workover) ..... Drlg. 4,143 ft.
Republic Production Co.'s No. 99 Dolbear (workover) ..... Pulling lines to deepen.
Republic Production Co.'s No. 109 Dolbear (workover) ..... Drlg. 1,362 ft.
Republic Production Co.'s No. 128 Dolbear (workover) ..... Tested salt water 2,583 ft.; resetting 2,239 ft.
The Texas Company's No. 8 Hannah-Vacuum ..... Location.

BIG CREEK—FORT BEND COUNTY

Gulf Production Co.'s No. 30 Davis (old well) ..... Abandoned 3,627 ft.
Gulf Production Co.'s No. 35 Davis, workover ..... To deepen.
Gulf Production Co.'s No. 55 Davis ..... Drlg. sand 3,753 ft.
The Texas Company's No. 2 Wheat (old well) ..... Washing 4,183 ft.

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 26 Wisdom ..... Drlg. hard lime 4,675 ft.

BATSON—HARDIN COUNTY

Acorn Oil Co.'s No. 71 Paraffine ..... Pumping 15 bbls. oil 1,143 ft.
The Beaux No. 1 King ..... Drlg. 989 ft.
W. G. Christian's No. 2 Millholme ..... To pump 1,729 ft.
Paraffine Oil Co.'s No. 46 Paraffine ..... Standing 1,243 ft.

SOUR LAKE—HARDIN COUNTY

Austin et al's No. 1 Watson ..... Rig.
Lake View Oil Co.'s No. 62 Hardin ..... Drlg. 1,466 ft.
United Oil & Fuel Co.'s No. 1 Brown ..... Drlg. 1,545 ft.

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SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 79-A Cotton ..... Flowing 59 bbls. oil 537 ft.
E. W. Skinner's No. 15 Kirby ..... Standing 1,502 ft.

ORANGE—ORANGE COUNTY

Gulf Production Co.'s No. 1 Morse-Granger et al (workover ..... Preparing to deepen.
Orange Petroleum Co.'s No. 8 Winfree (old well) ..... Fishing 3,431 ft.
Rex Petroleum Co.'s No. 6 Carbello, old well ..... Tested salt water 3,159 ft.

GOOSE CREEK—HARRIS COUNTY

Cedar Bayou Oil Co.'s No. 11 Busch ..... Rig.
Russell Ferrell's No. 4 Gillette (workover) ..... Rigging.
Gulf Production Co.'s No. 25 Ashbel Smith (workover) ..... Sidetracking 3,641 ft.
Humble Oil & Refg. Co.'s No. 75 Simms-Smith ..... Drlg. sandy shale 5,293 ft.
C. T. Rucker's No. 1 Jones ..... Shut down 1,586 ft.
Lake Shore Oil Co.'s No. 4 Duke ..... Drlg. 3,066 ft.
Lee & Scott's No. 3 Scott ..... Drlg. 2,183 ft.
Jim McMurry's No. 3 Grace Addey (old well) ..... Tested salt water 2,851 ft.; shut down.
Lube Well Oil Co.'s No. 1 Dannenbaum, old well ..... Tested salt water 1,607 ft.; shut down.
Newton & Lillie's No. 3 Schilling, old well ..... Shut down 1,621 ft.

SPINDLETOP—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 62 McFaddin (workover) ..... Drlg. shale 4,002 ft.
Yount Lee Oil Co.'s No. 72 McFaddin (workover) ..... Drlg. 4,441 ft.
Yount Lee Oil Co.'s No. 111 McFaddin ..... Drlg. sand 4,241 ft.
Yount Lee Oil Co.'s No. 112 McFaddin ..... Drlg. shale and lime 4,551 ft.
Yount Lee Oil Co.'s No. 113 McFaddin ..... Drlg. shale and lime 4,459 ft.
Yount Lee Oil Co.'s No. 114 McFaddin ..... Drlg. gumbo 2,084 ft.
Yount Lee Oil Co.'s No. 115 McFaddin ..... Drlg. gumbo 991 ft.
Yount Lee Oil Co.'s No. 53 Gladys City, workover ..... Rig up to deepen.
Yount Lee Oil Co.'s No. 84 Gladys City, workover ..... Drlg. sand 4,427 ft.
Yount Lee Oil Co.'s No. 95 Gladys City, old well ..... Drlg. sand 4,092 ft.
Yount Lee Oil Co.'s No. 96 Gladys City ..... Drlg. gumbo 1,094 ft.

WEST COLUMBIA—BRAZORIA COUNTY

Gulf Production Co.'s No. 3-B Hogg ..... Rig.
Humble Oil & Refg. Co.'s No. 3 Smith ..... Set 200 ft. screen 3,350 ft.; to pump.
Marland Oil Co.'s No. 1 Hogg ..... Hard sand 1,418 ft.
Saxet Oil Co.'s No. 1 Hogg ..... Drlg. rock 3,575 ft.
W. L. Pierson's No. 1 Masterson ..... Drlg. sand showing oil 1,492 ft.
The Texas Company's No. 24 Arnold ..... Set 1 joint screen 2,864 ft.; bailed dry; to deepen.

HIGH ISLAND—GALVESTON COUNTY

Gulf Production Co.'s No. 4-A Smith ..... Drlg. 2,661 ft.
Marrs McLean's No. 6 Cade (old well) ..... Drlg. 3,017 ft.
Marrs McLean's No. 15 Cade ..... Set screen 4,008 ft.; blew in spraying 65 bbls. oil.
Marrs McLean's No. 16 Cade ..... Drlg. 1,801 ft.

DAMON MOUND—BRAZORIA COUNTY

Sinclair Oil & Gas Co.'s No. 6 Norton ..... Bailed salt water 3,900 ft.; abandoned.
Leonard Petroleum Co.'s No. 4 Wisdom ..... Drlg. sticky shale 3,600 ft.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 19 Moore ..... Drlg. hard sand and lime 4,455 ft.

NORTH DAYTON—LIBERTY COUNTY

Fort Bend Oil Co.'s No. 1 Ballarack ..... Shut down 4,650 ft.

REFUGIO—REFUGIO COUNTY

Morgan Oil Corp.'s No. 1 City ..... Comp. flowing 500 bbls. pipe line oil on quarter-inch choke, 300 lbs. pressure; sand 3,666-75 ft.; total depth 3,679 ft.
Morgan Oil Corp.'s No. 1 Fox heirs ..... Cem. 10-in. casing 495 ft.
Hewitt et al's No. 1 Cemetery ..... Rig.
Houston Gulf Gas Co.'s No. 5 Ryals ..... Swabbing to test sand 3,671-76 ft.
Houston Gulf Gas Co.'s No. 6 Shelly ..... Oil sand 5,060-70 ft.; swabbing.
Houston Gulf Gas Co.'s No. 3 Rose Lambert ..... Waiting cement to set 3,648 ft.
Houston Gulf Gas Co.'s No. 5 O'Brien ..... Drlg. hard sand 1,805 ft.
Houston Gulf Gas Co.'s No. 2 Rooke ..... Cleaning hole 4,530 ft.; to deepen.
Houston Gulf Gas Co.'s No. 4 Fannie Heard (workover) ..... Rigging up.
Houston Gulf Gas Co.'s No. 8 Fannie Heard ..... Rigging up.
Houston Gulf Gas Co.'s No. 1 Buckley ..... Fishing drill pipe 2,680 ft.
Houston Gulf Gas Co.'s No. 1 Morgan-Skelly ..... Core sand showing gas 3,654 ft.; cem. casing.
Houston Gulf Gas Co.'s No. 1 Vance ..... Rig.
Korona Oil Co.'s No. 1 West ..... Cem. 10-in. casing 458 ft.
Korona Oil Co.'s No. 2 Reilly ..... Rig.
Mission Drlg. Co.'s No. 1 O'Brien ..... Drlg. hard sand 5,200 ft.
Mission Drlg. Co.'s No. 2 Powers ..... Abandoned in hard shale 4,508 ft.
Mission Drlg. Co.'s No. 1 J. F. B. Heard ..... Total depth 4,630 ft.; plugged to 3,630 ft.
Mission Drlg. Co.'s No. 2 J. F. B. Heard ..... Drlg. shale 3,430 ft.
Mission Drlg. Co.'s No. 2 Skelly ..... Derrick.
Mission Drlg. Co.'s No. 1 Strauch ..... Drlg. shale 2,084 ft.
Mission Drlg. Co.'s No. 1 Fox (workover) ..... Deepened from 3,675 to 3,678 ft.; reset screen; trying to kill gas pressure.
Mission Drlg. Co.'s No. 2 Mitchell ..... Spudding.
Oigufer Oil Co.'s No. 3 Ryals ..... Rig.
Saxet Oil Co.'s No. 1 Serafine ..... Rig.
Saxet Oil Co.'s No. 1 City ..... Rig.
Saxet Co.'s No. 9 Claude Heard ..... Comp. flowing 300 bbls. oil on quarter-inch choke 3,2828 ft.; pressure 1,000 pounds.
Houston Oil Co.'s No. 2 Rea ..... Gas sand 3,590-98 ft.
Houston Oil Co.'s No. 6 Wilson Heard ..... Swabbed salt water 3,692 ft.; to sidetrack.
Houston Oil Co.'s No. 8 Wilson Heard ..... Cem. 12-inch casing 520 ft.
Houston Oil Co.'s No. 6 Fannie Heard (workover) ..... Cutting casing 3,305 ft.
Blanco Creek Oil Co.'s No. 1 St. Johns ..... Shut down 3,700 ft.
W. L. Pearson, trustee, No. 2 Fox ..... Derrick.
W. L. Pearson, trustee, No. 1 Simpson ..... Drlg. 2,100 ft.
Sun Oil Co.'s No. 2 Buckley ..... Shut down for repairs 846 ft.
Sun Oil Co.'s No. 1 Liebring ..... Derrick.
Sun Oil Co.'s No. 1 Johnson ..... Rig.
Texas Gas Co.'s No. 1 Rogers ..... Comp. as gas well 3,675-78 ft.; flowing 350 bbls. pipe line oil; 1,400 lbs. pressure.
Union Exploration Co.'s No. 2 Rooke ..... To test oil and gas sand 3,665-74 ft.

SOUTH LOUISIANA FIELDS
LOCKPORT—CALCASIEU PARISH

Shell Petroleum Corp.'s No. 1 Miller ..... Drlg. brittle shale 6,720 ft.
Vacuum & Gulf's No. 15 Miller ..... Oil sand 4,380 ft.; cem. 6⅝-in. casing.
Vacuum & Gulf's No. 3 State ..... Rebuilding derrick; hole in gumbo 4,901 ft.
Vacuum Oil Co.'s No. 7 Bordages ..... Drlg. oil sand; set screen 3,688 ft. to test.
Vacuum Oil Co.'s No. 3-A fee ..... Drlg. sandy shale 3,718 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 7 Dorion, East Hackberry ..... Location.
Calcasieu Oil Co.'s No. 15 Watkins, East Hackberry ..... Set screen to test oil sand 3,975 ft.
Fraim Oil Co.'s No. 1 Duhon, Old Hackberry ..... Standing 4,384 ft.
Rycade Oil Corp.-Humble Oil & Refg. Co.'s No. 3 Gulf Land, Old Hackberry ..... Oil sand 3,850-82 ft.; fishing core barrel.
Sunshine Oil Co.'s No. 2 Ellender, Old Hackberry ..... Spudded.
Sunshine Oil Co.'s No. 3 Ellender, Old Hackberry ..... Rig.
The Texas Company's No. 5-B Calcasieu Lake, East Hackberry ..... Drlg. hard sand and rock 4,179 ft.
Yount Lee Oil Co.'s No. 9 School Land (Old Hackberry) ..... Drlg. shale and sand 4,861 ft.

JENNINGS—ACADIA PARISH

Fred Getty's No. 3 Jennings-Clemont ..... Location.
Kathleen Oil Co.'s No. 1 Syndicate fee ..... Cem. 6⅝-in. casing 3,800 ft.; to test oil sand.
E. L. Meyers' No. 1 Clemont-Zigler (old well) ..... To work over 1,805 ft.
Yount Lee Oil Co.'s No. 4 Crowley, northeast flank, Section 48-9s-2w ..... Drlg. plug 7,541 ft.; to test oil sand 7,563 ft.
The Texas Company's No. 5 Rayne heirs (King tract) ..... Drlg. 421 ft.
Yount Lee Oil Co.'s No. 5 Crowley, Sec. 48-9s-2w ..... Location.
Yount Lee Oil Co.'s No. 7 Houssiere-Latrielle, Sec. 47-9s-2w ..... Drlg. hard sand 5,981 ft.

EDGERLY—CALCASIEU PARISH

C. M. Crotty's No. 15 Lillard ..... Total depth 1,896 ft. in oil sand; sidetracking 1,026 ft.
Rex Petroleum Co.'s No. 10 Hunter (workover) ..... Drlg. deeper 4,812 ft.

VINTON—CALCASIEU PARISH

Gulf Refining Co.'s No. 48 Star Vincent, Sec. 34-10s-12w ..... Sand showing oil 2,393 ft.; cem. 6⅝-in. casing 2,348 ft.
Vinton Petroleum Co.'s No. 2 Matilda Gray (workover) ..... Drlg. 3,132 ft.
Marrs McLean's No. 4 Gray (workover) ..... Drlg. 1,832 ft.

BAYOU BOUILLON—ST. MARTIN PARISH

Rycade Oil Corp.'s No. 7 Bouillon fee ..... Drlg. hard sandy shale 4,354 ft.
Rycade Oil Corp.'s No. 3 State (former well) ..... Milling 3,583 ft.

SORRENTO—ASCENSION PARISH

Gulf Refining Co.'s No. 15 United, Sec. 22-10S-4e ..... Drlg. sticky shale 5,225 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 736 fee ..... Drlg. rock 5,727 ft.
Union Sulphur Co.'s No. 746 fee, Sec. 29-9s-10w ..... Comp. flowing 2,000 bbls. 4,160 ft.
Union Sulphur Co.'s No. 749 fee, Sec. 29-9s-10w ..... Comp. flowing 2,500 bbls.
Union Sulphur Co.'s No. 750 Fee ..... Drlg. 812 ft.
Union Sulphur Co.'s No. 751 Fee ..... Drlg. 740 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 7 Yount Lee ..... Drlg. sand 6,351 ft.
Pure Oil Co.'s No. 8 Yount Lee ..... Shut down.

ANSE LA BUTTE—ST. MARTIN PARISH

Yount Lee Oil Co.'s No. 5 Louisiana Pet. Co. ..... Rigging up to pump.
Bowie Oil & Gas Co.'s No. 5 Begnaud ..... Drlg. 805 ft.

MISCELLANEOUS WILDCATS
TEXAS
AUSTIN COUNTY

Whittington et al's No. 1 Lass, 4 miles northwest of Bellville ..... No report.

BRAZORIA COUNTY

Faust et al's No. 1 Faust ..... Spudded.

CHAMBERS COUNTY

Chicago Oil Corp.'s No. 1 Lawrence ..... Shut down in gumbo 1,200 ft.
Layne et al's No. 1 Fitzgerald ..... Shut down in rock 2,635 ft.
Pure Oil Co.'s No. 3 Mayes, Lost Lake ..... Sandy shale 2,780 ft.; cem. 6¼-in. casing 2,735 ft.
Pure Oil Co.'s No. 3 Lost Lake, Lost Lake ..... Rig.

FORT BEND COUNTY

Gulf Production Co.'s No. 12 Trone, Long Point ..... Drlg. hard sand 4,304 ft.
Grayburg Oil Co.'s No. 1 Ranson ..... Drlg. lime 3,666 ft.

HARRIS COUNTY

Baldwin and associates' No. 1 Kitzman, Cypress ..... Standing 4,055 ft.
Gulf Crest Oil Co.'s No. 1 Gulf Crest ..... Shut down 1,040 ft.
A. F. Belunek's No. 1 Thompson ..... Started drilling.
Humble Oil & Refg. Co.'s No. 6 Warren Hockley ..... Changing rigs 2,075 ft.
Humble Oil & Refg. Co.'s No. 1 Sidons Mykawa ..... Derrick.
Humble Oil & Refg. Co.'s No. 1 Woodburn, Genoa ..... Drlg. sticky shale 4,893 ft.
Paxton et al's No. 1 Brown, Wooster ..... Abandoned.
York & Robertson's No. 1 Garrett, Harris & Carpenter Sur. ..... Drlg. sticky shale 1,771 ft.

JEFFERSON COUNTY

Bleakie Oil Co.'s No. 1 Tolliver, Dyches Sur. ..... Shut down 2,800 ft.
Deep Test Oil Corp.'s No. 1 Faith-McFadden ..... Shut down 3,706 ft.
Gulf Production Co.'s No. 3 Burrell Fannette ..... Drlg. sand and lime 2,792 ft.
Gulf Production Co.'s No. 1 Junker, Fannette ..... Drlg. rock 1,724 ft.
Gulf Production Co.'s No. 11 Thomas, Fannette (workover) ..... Rigging up to pump 5,636 ft.
Gulf Production Co.'s No. 12 Thomas, Fannette ..... Set 10-in. casing in gumbo 1,351 ft.
River Oil Corp.'s No. 1 Ship Channel, Brown Survey ..... No report.
Shell Petroleum Corp.'s No. 1 Heisig, Hampshire ..... Drlg. gummy shale and lime 6,508 ft.
The Texas Company's No. 2 Pipkin, Big Hill ..... Drlg. lime rock 2,862 ft.
The Texas Company's No. 1 Fitzhugh, Big Hill ..... Rig.
The Texas Company's No. 1 Burrell, Fannette ..... Drlg. sand and boulders 1,151 ft.
Vacuum Oil Co.'s No. 1 Herbert-Broussard, T.&N.O. Sur. No. 208 ..... Drlg. sand and shell 6,653 ft.
Westbury Oil Co.'s No. 1 West ..... Shut down 2,325 ft.

LIBERTY COUNTY

Gulf Production Co.'s No. 2 Boyt Hankamer ..... Blew out estimated 30,000,000 ft. gas and 15,000 bbls. salt water 3,692 ft.; rebuilding derrick.
Gulf Production Co.'s No. 1 Lee, Hankamer ..... Location.
Humble Oil & Refg. Co.'s No. 6 Sterling, Moss Bluff ..... Rig.
Pure Oil Co.'s No. 1 Liberty, Moss Bluff ..... Drlg. hard sand 4,384 ft.
Union Exploration Co.'s No. 1 Vajdak, Sheeks ..... Rig.
Union Exploration Co.'s No. 4 Esperson, Sheeks ..... Rig.

MONTGOMERY COUNTY

Kelley-Baker et al's No. 1 Juerges ..... No report.

ORANGE COUNTY

Gulf Production Co.'s No. 1 Starks, Port Neches ..... Rig.
The Texas Company's No. 1 Polk, Port Neches ..... Rig.
The Texas Company's No. 1 Starks, Port Neches ..... Drlg. sticky shale and lime 2,415 ft.

WALLER COUNTY

Kirby Petroleum Co.'s No. 1 Vaughn, San Felipe ..... Building new derrick; bottom of hole 3,005 ft.

SOUTH LOUISIANA
ASCENSION PARISH

Pickard & Geisman's No. 1 Desire Breaux, Darrow ..... Shut down 3,778 ft.
Big Dome Drlg. & Dev. Co.'s No. 1 Reardon, Darrow ..... Total depth 4,747 ft.; standing with casing collapsed.
Triumph Oil Corp.'s No. 2 Lacey, Sec. 20-10s-4e ..... No report.

CALCASIEU PARISH

Wilfred LaHay's No. 2 James, Sec. 14-10s-13w ..... Shut down 3,365 ft.
J. O. Davis' No. 1 Mims, Sec. 20-9s-7w ..... Standing 5,600 ft.

CAMERON PARISH

Shell Pet. Corp.'s No. 11 Watkins, Black Bayou ..... Drlg. lime and calcite 1,693 ft.
Shell Pet. Co.'s No. 12 Watkins, Black Bayou ..... Drlg. blue shale and lime 2,815 ft.
Shell Pet. Corp.'s No. 13 Watkins, Black Bayou ..... Location.
Shell Pet. Corp.'s No. 1 Marceaux, Mallard Bay, Sec. 32-12s-3w ..... Moving in rig.
The Texas Company's No. 4-A Calcasieu Lake, Calcasieu Lake Dome ..... Derrick.
Yount Lee Oil Co.'s No. 1 Starks, Sec. 1-15s-15w ..... Moving in rig.

EVANGELINE PARISH

The Texas Company's No. 1 Guillory, Pine Prairie ..... Drlg. gumbo 3,768 ft.

IBERIA PARISH

Jefferson Lake Oil Co.'s No. 2 Lake Peigneur, Jefferson Island ..... Rig.
The Texas Company's No. 4-A Vermillion Bay ..... Building derrick.

IBERVILLE PARISH

Shell Petroleum Corp.'s No. 3 Wilbert, White Castle ..... Total depth 6,029 ft.; trying to plug back.
Standard Oil Co.'s No. 3 Wilbert, Bayou Blue ..... Drlg. 1,650 ft.
Standard Oil Co.'s No. 2 Schwing, Bayou Blue ..... Drlg. 2,421 ft.
Standard Oil Co.'s No. 3 Schwing, Bayou Blue ..... Location.
Standard Oil Co.'s No. 4 Schwing, Bayou Blue ..... Location.
Standard Oil Co.'s No. 5 Schwing, Bayou Blue ..... Derrick.

JEFFERSON DAVIS PARISH

Vacuum Oil Co.'s No. 2 DeVilbiss, Roanoke ..... Shale and shell showing oil 4,339 ft.; cem. 9⅝-in. casing 4,295 ft.

PLAQUEMINE PARISH

The Texas Company's No. 2 Garden Island Bay, Sec. 107-23s-32e ..... Cleaning up after blowout.
Humble Oil & Refg. Co.'s No. 1 Cockrell-Moran, Sec. 2-20s-26e ..... Drlg. 1,741 ft.

ST. BERNARD PARISH

St. Bernard Oil & Gas Co.'s No. 1 fee, Sec. 15-14s-15e ..... Shut down 726 ft.

ST. MARTIN PARISH

Ohio Oil Co.'s No. 3 Martin, Hager Dome ..... Standing 4,490 ft.
The Texas Company's No. 1 fee, Hager Dome ..... Drlg. 4,305 ft.
The Texas Company's No. 2 St. Martin, Hager ..... Rig standing.

The Texas Company's No. 3 Fee, Hager .....Location.
The Texas Company's No. 4 Fee, Hager .....Location.
The Texas Company's No. 1 Iberville, Hager .....Derrick.
The Texas Company's No. 2 Iberville, Hager .....Location.
The Texas Company's No. 3 Iberville, Hager .....Location.

ST. TAMMANY PARISH

St. Tammany Oil Co.'s No. 2 Fritchie, Sec. 35-8s-14e ....Drlg. 2,306 ft.

TANGIPAHOA PARISH

Completion Oil Co.'s No. 1 Amos .....No report.
Joan Development Co.'s No. 1 Hilton, Sec. 20-9s-9e .....Shut down 3,985 ft.

TERREBONNE PARISH

The Texas Company's No. 2-A Dog Lake Bayou, 400 ft. south of No. 1 .....Derrick.
The Texas Company's No. 1-B Dog Lake, Sec. 6-22s-16e..Drlg. sandy shale showing oil and gas 1,120 ft.
The Texas Company's No. 1 Taylor, East Bay Junop Dome .....Set 12½-in. casing in gumbo 1,789 ft.
The Texas Company's No. 2-A Lake Barre, Section 30-21e-20e .....Drlg. gumbo 2,195 ft.
The Texas Company's No. 2-B Bay Coon Road, Sec. 17-22s-18e .....Cem. 9¼-in. casing gumbo 714 ft.
The Texas Company's No. 3-B Bay Coon Road, Sec. 17-22e-18e .....Derrick.
The Texas Company's No. 2 La. L. L. & E. Co., Four Isle..Derrick.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 58)

DUVAL COUNTY

Magnolia Petroleum Co.'s No. 1 Corbett, Sur. 96 .....Drlg. 3,935 ft.
National Oil Co.'s No. 2 Ball, Agua Poquita Sur., Blk. 3..Derrick.

EDWARDS COUNTY

A. M. Griffith's No. 1 Wardlaw .....Fishing 2,600 ft.

FAYETTE COUNTY

Muldoon Oil & Gas Co.'s No. 1 Kemp, M. Smith League..Location.
Magnolia Petroleum Co.'s No. 1 Henry Gully.....Drlg. 3,674 ft.
National Oil Co.'s No. 1, A. Hanger Williams League.....Drlg. 1,820 ft.
W. J. Kelly's No. 1 Burke .....Changing to heavier rig. 280 ft.
Marshall & Moore's No. 1 John A. Kerr.....Drlg. 2,485 ft.

GOLIAD COUNTY

Humble O. & R. Co.'s No. 1-A Mueller, Luis Carriana Sur. .....Drlg. 780 ft.
F. P. Zoch's No. 1 Kaufman .....Rigging up.
Mission Drlg. Co.'s No. 3 Roy Rand, 3 miles E of No. 2. This formerly carried in Bee County, Pettus Pool....Flowed 900 bbls. 4,059 ft., 10 hrs.
Western Union Oil Co.'s No. 1 Lucas, Juan Moya y Delgado Sur. .....Location.

GONZALES COUNTY

Joe Bruner's No. 1 R. D. and J. C. Miller.....Drlg. 2,775 ft.
Crown Petroleum Co.'s No. 1 Hattenback .....Shut down 2,330 ft.
Finnell & Elam's No. 1 Robinson, Liverpool Survey.....Shut down 1,260 ft.
Hoffman and others' No. 1 Booker, J. Stewart Sur.....Shut down 410 ft.
L. L. Jones' No. 1 J. F. Kindred, W. W. Barnes Sur., 700 ft. W line, 1,000 ft. S line .....Location.
Linderman Brothers' No. 1 F. H. Frampton.....Shut down 1,160 ft.
Fort Bend Oil Co.'s No. 1 C. E. Ham.....Drlg. 2,680 ft.
Frank Sorrell's No. 2 Wilkenson.....Standing 174 ft.
A. G. Kifer's No. 1 B. B. Dix .....Drlg. 1,400 ft.

GUADALUPE COUNTY

Grayburg Oil Co.'s No. 1 Wells, Jose La Bume Sur. .....Derrick.
Burgess' No. 1 Lennen .....Abandoned 2,352 ft (depth corrected).
Sights et al's No. 1 S. Hensel .....Shut down.
Sinclair Oil & Gas Co.'s No. 1 Ed Tewes .....Drlg. 1,974 ft.
L. W. Stieren's No. 1 S. H. Herman, Ragsdale Survey....Shut down 1,233 ft.
R. R. Penn's .....Set casing 2,418 ft.
Adams-Lyles-Walton's No. 1 Zoluroski, Jesus Cantu Sur..Shut down 975 ft.

HAYS COUNTY

E. A. Bucklin's No. 1 .....Set casing 540 ft.

JIM HOGG COUNTY

Deep Rock Oil Co.'s No. 1 Kelsey .....Drlg. 1,331 ft.

JIM WELLS COUNTY

E. W. Ogden's No. 1 G. Farris, M. Perez Sur.....Drlg. 990 ft.
Magnolia Pet. Co.'s No. 1 C. Cook, W. H. Sartain Sur., Blk. 45 .....Drlg. 1,316 ft.

KARNES COUNTY

Benedum-Trees' No. 1 S. E. Crews, Britton Odem Sur. ....Moving in.
L. B. Flowers' No. 1 R. L. Barnett, 4 mi. NE Karnes City.Same test as G. G. Fisher's No. 1 Barnett.
G. G. Fisher et al's No. 1 Barnett, 6 miles N of Karnes City .....Drlg. 925 ft.
Hurador Oil Co.'s No. 1 W. E. Porter.....Drlg. 2,300 ft.
Scott Townsend and others' No. 1 Ruckman.....Abandoned 2,500 ft

KERR COUNTY

L. R. Page and Associates' No. 1 Real .....Drlg. 3,506 ft.

KIMBLE COUNTY

Carl L. Bryant's No. 1 C. E. Lambert .....Drlg. 150 ft.
H. A. McLean & Jamison's No. 1 R. F. Cannon.....Shut down 995 ft.
J. B. Lindsay's No. 1 G. C. Anderson .....Drlg. 785 ft.

KINNEY COUNTY

Lloyd Oil Co.'s No. 1 G. B. Moore, Survey 117.....Drlg. 2,015 ft.

LASALLE COUNTY

J. G. Nix's No. 1 Coleman, Survey 68.....Standing 500 ft.

LIVE OAK COUNTY

Dr. Frank Lynch's No. 1 Secrest, Simmons Tracts.....Drlg. 770 ft.

MAVERICK COUNTY

Ryan Consolidated Petroleum Co.'s No. 2 Indio Ranch....Drlg. 5,266 ft.
Rycade Oil Corp.'s No. 3 Chittim .....Drlg. 5,440 ft.; set casing.
Rycade Oil Corp.'s No. 4 J. M. Chittim.....Drlg. 6,000 ft.
Rycade Oil Corp.'s No. 4 Sullivan .....Drlg. 4,560 ft.
Rycade Oil Corp.'s No. 5 Chittim .....Clearing land for rig
The Texas Company, 5 miles west Darling Switch.....Drlg. 1,103 ft.

MEDINA COUNTY

R. C. Hill's No. 1 A. Wuezbach, G. Areola Sur., 500 ft. E line, 600 ft. S line .....Location.
Zig Zag Oil Co.'s No. 1 San Antonio Irrig., Kemp Sur....Drlg. 2,121 ft.
Pat Armstrong's No. 1 C. W. Butts .....Derrick.
California-Medina's No. 1 Rothe .....Drlg. 3,426 ft.
Trapshooter Reilly Oil & Royalties Co.'s No. 1 Adams, L. Fritz Sur. .....Drlg. 750 ft.

MILAM COUNTY

McCormick & Noack's No. 3 Skelton, Wm. Allen Sur.....Location.
I. P. Sessions' No. 7 J. Bauer, T. J. Chambers Sur. .....Location
J. M. Burkhead's No. 1 C. Weigham .....Drlg. 1,967 ft.
E. L. Chapman's No. 1 Johnson, J. J. Acosta Sur.....Shut down 1,385 ft.
E. L. Chapman's No. 1 E. G. Knight .....Shut down 1,970 ft.
Diggs and others' No. 1 Nolen .....Derrick.
Hill & Bonwell's No. 1 B. Booher, James Welch Survey..Drill stem stuck, 2,007 ft.
Lloyd Oil Corp.'s No. 1 Camp, Acosta Sur.....Derrick.
Lloyd Oil Corp.'s No. 1 San Clement, Fakes Sur.....Spudded in.
Wilson and others' No. 1 Johnson & Stiles.....Location.
Elbert Williams' No. 1 Tom Shigue .....Abandoned 3,502 ft
J. W. Stiff's No. 1 M. Winston, J. Leal Sur.....Location.
A. H. Wray's No. 1 D. D. Fowler.....Drlg. 964 ft.

McMULLEN COUNTY

Natt Holman's No. 1 Shiner, H. M. Brewer Survey.....Drlg. 1,515 ft.

NUECES COUNTY

Nueces River Basin Dev. Co.'s No. 1 F. C. Allen.....Drlg. 2,400 ft.
Pearson and others' No. 1 Bluntzer .....Standing 3,507 ft.
R. & G. Corp.'s No. 1 Elmily Wright Perkins.....Standing 3,510 ft.
R. & G. Corp.'s No. 1 Roberts.....Location.
R. & G. Corp.'s No. 1 Ragland.....Standing 3,002 ft.
Trinity Drillers and Sun Co.'s No. 1 Tompkins.....Drlg. 2,116 ft.

SAN PATRICIO COUNTY

Magnolia Petroleum Co.'s No. 1 C. Freeman, Sec. 87.....Drlg. 4,043 ft.
Houston Gulf Gas Co.'s No. 2 Welder .....Drlg. 5,033 ft.

STARR COUNTY

The Texas Company's No. 4-A V. G. Guerra, Porcion 67, Share 305-D .....Location.
Smith & Adams' No. 1 Welch, Pedernal Sur.....Drlg. 531 ft.
Ohio Oil Co.'s No. 1 Bass, Por. 76, Blk. 71.....Drilling.
Milam Drlg. Co.'s No. 5 R. Allen, Blk. 147.....Location.
U. S. Oil & Gas Co.'s No. 1 Kelsey, Por. 76, Blk. 11.....Standing.

TRAVIS COUNTY

J. W. Allen's No. 1 McAngus, Westbrook Sur.....Location.

WEBB COUNTY

G. S. Lumpkin's No. 1 H. Yeager, Por. 33-34-35.....Location.
Usher Carson's No. 2 D. Benavides, Sur. 1,613.....Drlg. 1,900 ft.

WILLIAMSON COUNTY

Ray Oil Co.'s No. 1 W. J. Fouse, W. Donoho Sur. .....Location.
W. J. Harlan's No. 1 J. V. Stile, J. Bevil Sur., 600 ft. N line, 900 ft. E line .....Location.
F. M. Moss et al's No. 1 Kreuger, W. Cartwright Sur., SW cor. .....Location.
J. C. Hawkins, 1½ miles northwest discovery well.....Location.

WILSON COUNTY

R. M. Sherer's No. 1 Tummilson, A. Trevena Sur.....Drlg. 457 ft.
Grayburg Oil Co.'s No. 1 Tigler, Parrott Sur. .....Coring 2,290 ft.; Basal midway.
R. M. Sherer's No. 1 First State Bank of Stockdale,... Moran Sur. .....Drlg. 220 ft.

ZAPATA COUNTY

Hill et al's No. 1 A. O. de Vela, Blk. 30, El Grullo Sur. .....Location.
National Oil Co.'s No. 1 D. B. Adams .....Standing 690 ft.
Buck & Coursey's No. 1 Garza, Blk. 47 .....Drlg. 1,474 ft.
Buck & Coursey's No. 1 Trevino, Sur. 1 .....Drlg. 1,278 ft.

ZAVALA COUNTY

Tritex Oil Co.'s No. 1 Clay Burns .....Drlg. 780 ft.
Tritex Oil Co.'s No. 4 West .....Drlg. 795 ft.
Tritex Oil Co.'s No. 1 Childress .....Drlg. 1,095 ft.

OKLAHOMA FIELDS

(Continued from Page 50)

general Seminole area in the course of the week. The Sinclair Oil & Gas Co.'s No. 3 Phillips, C SW NE SE, Section 5-7-7, Sasakwa Field, Seminole County, got Wilcox sand at 4,220 feet, total depth 4,243 feet. The well was given a 20-quart shot and swabbed 660 bbls. in 11 hours. The Barnsdall Oil Co. and Indian Territory Illuminating Oil Co.'s No. 2 Tulley, C SE NE NE, Section 10-8-5, in the Mission area, Seminole County, plugged back to 4,198 feet where it is producing 240 bbls. a day. The Independent Oil & Gas Co.'s No. 12 Harris, NE cor. NW NW, Section 23-7-6, Little River area, made 464 bbls. the first 24 hours from Cromwell sand at 3,134-39 feet. The Skelly Oil Co.'s No. 1 Decker, NW cor. SW, Section 16-7-4, Pearson district, Potawatomie County, found the Simpson lime at 4,090-4,116 feet, total depth. The well started flowing 45 bbls. an hour of 40 gravity oil. The interesting Signal Oil Co. test, No. 1 Bond, SW SW NE, Section 13-6-7, Seminole County, was making 130 bbls. a day through a five-sixteenths inch choke. It was showing some free water. The Gypsy Oil Co.'s No. 3 Payne, SW NE NE, Section 18-9-6, swabbed 210 bbls. in 24 hours from Wilcox sand at 4,259-70 feet. The Barnsdall Oil Co. got a hole full of water in No. 1 Noble, NE NW SW, Section 18-9-6, from Wilcox sand at 4,263 feet, total depth 4,283 feet. The well was shut down for orders. It had 2,000 feet of oil in the hole from the Simpson. The Gypsy Oil Co.'s No. 4 Payne, NE NW SE, Section 17-7-4, St. Louis-Pearson area, swabbed 462 bbls. from Viola lime at 4,032-40 feet and was still drilling. The Magnolia Petroleum Co. was in Wilcox sand with a fishing job in No. 6 Anderson, NW SW NE, Section 18-9-6, Seminole County. Wilcox sand was topped at 4,260 feet and drilled to 4,288 feet. There was 1,000 feet of oil in the hole.

The Burke-Greis Oil Co. is digging cellar for No. 2, C SW SE SW, Section 32-10-6. The Wrightsman Petroleum Corp. has cellar dug for No. 2, C NE NE NE, Section 19-9-6.

In Noble County, the Barnsdall Oil Co. and Indian Territory Illuminating Oil Co.'s No. 1 McCormick, NE NE SE, Section 33-21-1w, is an 18,000,000-foot gas well with a rock pressure of 1,400 pounds from sand at 3,365-72 feet.

Beckham County

Producers Exploration Co.'s No. 1 Seidel, SE cor. SW SW, Section 17-9-22w, has been abandoned at 2,404 feet. Pease and others' No. 1 Pederson, NE cor. NW, Section 23-9-23w, has been abandoned at 2,784 feet. M. T. C. Oil Co.'s No. 1-A Abbott, NE cor. Section 35-9-22w, has been abandoned at 1,500 feet.

Caddo County

W. J. Hartley and others' No. 1 Galbreath, SE cor. NW SE, Section 29-5-12w, has been temporarily abandoned at 3,394 feet. Caddo Oil Co.'s No. 1 Bontrager, NW cor. NE NW, Section 9-5-9w, has been temporarily abandoned at 2,420 feet. Bullock and others' No. 2 Rigney, SW cor. NW NW SE, Section 12-5-9w, has been temporarily abandoned at 2,130 feet.

Carter County

Magnolia Petroleum Co.'s No. 2 Powers, NW cor. NE NW, Section 4-2s-3w, is drilling at 350 feet.

Coal County

Indian Territory Illuminating Oil Co.'s No. 1 Cook, SE cor. SW NW, Section 10-1-11, is dry and abandoned at 7,890 feet.

Cotton County

Scott & Arington's No. 1 Cogswell, SE cor. NW SE, Section 26-1s-10w, is a rig. Shasta Oil Co.'s No. 2 Slogan, NW cor. NE NE, Section 2-2s-10w, has cemented pipe at 2,149 feet and is installing a machine. No. 3 Slogan, NW cor. NE NE, Section 2-2s-10w, is a location. Wirt Frankin Oil Corp.'s No. 2 Chambers, SE cor. NE SW SE, Section 35-1s-10w, is drilling at 670 feet. Baldwin & Sultan's rig is up for No. 4 Rhone, SE cor. SW SE SE, Section 35-1s-10w.

Perkins & Cullum's No. 4 Smith, SW cor. SE SE, Section 34-1s-10w, has been completed for 10 bbls. in sand at 2,180-98 feet. Shasta Oil Co.'s No. 1 Slogan, NW cor. SW NW NE, Section 2-2s-10w, made 108 bbls. in sand at 2,133-40 feet. Payne & McGaha's No. 1 Beck, NW cor. SW SW, Section 29-4s-11w, has been abandoned at 3,505 feet.

Garvin County

Tidal Oil Co.'s No. 1 Halverton, C SW NE, Section 8-4-2, has been abandoned at 4,055 feet.

Grady County

Meridian Gas Co. made location for No. 1 Kinnard, CNL NE NE, Section 34-4-8w.

Hughes County

W. B. Pine has the rig up for No. 1 Davis, NW cor. Section 17-5-8. Erwin and others moved the rig in for No. 1 Jones, SE cor. NE, Section 30-5-10. W. B. Pine's No. 1 Welch, NE cor. Section 6-8-9, has been completed for 26,000,000 feet of gas in Papoose sand at 3,400-03 feet.

Jackson County

Houseman and others' No. 1 Northington, NE cor. Section 4-1-20w, has been temporarily abandoned at 2,020 feet.

Kiowa County

George Eshleman and others' No. 1 Foster, NE cor. SW NW, Section 18-6-16w, has topped a sand at 396 feet and is pumping 20 bbls. Connor & Son's No. 1 Geis, SE cor. NW NE, Section 26-7-16w, has been abandoned at 2,535 feet. D. M. Hyde's No. 1 Ballard, SE cor. Section 22-3-18w, has been abandoned at 510 feet.

Oklahoma County

Indian Territory Illuminating Oil Co.'s No. 1 Oklahoma City, C SE SE, Section 24-11-3w, the discovery well of the field, is drilling deeper at 6,516 feet. Shell

Petroleum Corp. is digging the cellar for No. 5 Petty, NW cor. SW NE, Section 30-11-2w. The cellar is also being dug for No. 4 Petty, SW cor. NW NE, Section 30-11-2w.

Jefferson County

T. J. Barnes made location for No. 1 Stanfield, C NW SE, Section 33-7s-6w. Pearce & Brown's No. 1 Fisher, SE cor. SW, Section 13-6s-7w, has been abandoned at 2,501 feet.

Osage County

Osage Gas Producers Co. moved a machine in for No. 395, CSL NE SW, Section 29-28-11. Jennings Oil Co.'s No. 1, NW cor. SW, Section 32-29-12, has been completed for 5 bbls. in Peru sand at 841-54 feet. Osage Gas Producers Co.'s No. 394, NE cor. SW SW, Section 29-28-11, has been completed for 1,500,000 feet of gas in Mississippi lime at 1,821-48 feet. Phillips Petroleum Co.'s No. 17, NW cor. SE NW, Section 23-27-5, has been completed for an air hole at 3,006 feet. Ray Branstetter and others' No. 1-A, SE cor. SW, Section 23-23-10, made a 40-bbl. well in sand at 1,781 feet after plugging back from 1,922 feet.

Silurian Oil Corp.'s No. 57, NE cor. NW NW, Section 17-23-12, made 40 bbls. in Bartlesville sand at 1,470-1,539 feet. Barnsdall Oil Co. and Branstetter's No. 4, CEL SE, Section 22-22-11, has been completed for 20 bbls. in Bartlesville sand at 1,605-45 feet. Moore and others' No. 8, NW cor. NE NW, Section 16-21-9, made a 20-bbl. well in Skinner sand at 2,005-58 feet. Oklahoma Power & Water Co.'s No. 116, NW cor. SW, Section 28-21-10, is dry and abandoned at 2,505 feet in Wilcox sand.

Pawnee County

Hay and others made location for No. 3 Copeland, NW cor. SW, Section 26-20-9. McMan and others made location for No. 2, Johnson, NE cor. SE, Section 27-20-9. Johnson Oil & Refining Co. made location for No. 1 Byles, SE cor. NE, Section 27-20-9.

C. C. Chamberlain's No. 1 Coats, SW cor. NW, Section 26-20-9, has been completed for 80 bbls. in Red Fork sand at 2,150-67 feet.

Pontotoc County

Independent Oil & Gas Co. and Shaffer Oil & Refining Co. has the rig on the ground for No. 1 Moses, NE cor. SE SW, Section 10-5-4. Transcontinental Oil Co. has built the rig for No. 2 Bolen, NE cor. SW NW, Section 19-5-5. Texas Pacific Coal & Oil Co. made location for No. 2 Hatcher, NE cor. NW NE, Section 30-5-5. Benedum & Trees' No. 1 Bullard, NE cor. SE NW, Section 31-5-5, is drilling at 910 feet. No. 6 Mole, SW cor. NW NE, Section 31-5-5, is drilling at 1,169 feet.

Superior Oil Corp.'s rig is up for No. 5 Maulden, SE cor. NW, Section 32-5-5. W. R. Ramsey's No. 8 Miller, SE cor. NE SE, Section 18-5-8, Allen Pool, is rigging up. Location has been made for No. 9 Millner, NW cor. SE SE, Section 18-5-8.

Pottawatomie County

Empire Oil & Refining Co. and Amerada Petroleum Corp. made location for No. 3 Bullock, SE cor. NE NW, Section 8-9-5, Earlsboro Pool. Superior Oil Corp. made location for No. 2 Songster, SW cor. NW NW, Section 8-9-5. Magnolia Petroleum Co. made location for No. 1 Anderson, SW cor. Section 1-7-4, St. Louis Pool. Magnolia Petroleum Co. made location for No. 1 Wilamette, NE cor. Section 11-7-4.

Empire Oil & Refining Co. has the rig on the ground for No. 2 Bettis, NE cor. SE SE, Section 17-7-4. Gypsy Oil Co. has dug the cellar for No. 5 Green, NW cor. NE SE, Section 17-7-4. The rig is on the ground for No. 6 Green, SE cor. NE SE, Section 17-7-4. Pure Oil Co. is building the rig for No. 1 Brandenburg, NW cor. NE NW, Section 21-7-4. Magnolia Petroleum Co. made location for No. 2 Hilton, SE cor. NW NW, Section 22-7-4.

Phillips Petroleum Co.'s No. 2 Reade, SE cor. NW NW, Section 8-9-5, Earlsboro Pool, has been completed for 1,397 bbls. in Wilcox sand at 4,373-95 feet. Empire Oil & Refining Co. and Amerada Petroleum Corp.'s No. 1 Henry, SW cor. NE NW, Section 8-9-5, has been completed for 2,215 bbls. in Wilcox sand at 4,360-80 feet. W. B. Pine's No. 2 Smith, SE cor. SW NE, Section 8-8-5, Maud Pool, made 445 bbls. in Hunton lime at 3,997-4,025 feet. Wilcox Oil & Gas Co.'s No. 6 Smith, NE cor. SE, Section 8-8-5, has been completed for 947 bbls. in Hunton lime at 4,076-95 feet.

Shell Petroleum Corp.'s No. 1 Jordan, SW cor. NW, Section 9-8-5, made 1,286 bbls. from Hunton lime at 4,024-50 feet. Independent Oil & Gas Co. and Margay Oil Co.'s No. 1 Crain, SE cor. SW NE, Section 8-7-4, Pearson area, is dry and abandoned at 4,617 feet. Darby Petroleum Co.'s No. 2 Nixon, SE cor. SW SW, Section 9-7-4, made 280 bbls. from Hunton lime and Simpson sand, total depth 4,046 feet. Magnolia Petroleum Co.'s No. 1 Tartar, SW cor. NW SW, Section 15-7-4, flowed 335 bbls. from Hunton lime at 3,690-3,763 feet.

Atlantic Oil Producing Co. and Independent Oil & Gas Co.'s No. 2 Burke, NW cor. NE, Section 16-7-4, has been completed for 90 bbls. at 3,950 feet. The Prairie Oil & Gas Co.'s No. 1 Reagan, SE cor. NE, Section 17-7-4, made 2,095 bbls. in Viola lime at 3,930-65 feet. Houston Oil Co.'s No. 2 Wyatt, NW cor. NE SW, Section 17-7-4, has been completed for 1,800 bbls. from Simpson sand at 4,115-30 feet. No. 3 Wyatt, NE cor. SW, Section 17-7-4, made 900 bbls. from Simpson sand at 4,060-92 feet. No. 4 Wyatt, NW cor. SW, Section 17-7-4, swabbed 15 bbls. but was abandoned at 4,221 feet.

Independent Oil & Gas Co. and Darby Petroleum Co.'s No. 1 Curly, NW cor. SE NW, Section 22-7-4, made 23,000,000 feet of gas in Hunton lime at 3,602-3,714 feet. The Prairie Oil & Gas Co. and T. B. Slick's No. 6 Laster, NE cor. SW NE, Section 19-6-4, Asher Pool, made 6,135 bbls. in Viola lime at 3,639-82 feet.

Seminole County

Skelly Oil & Gas Co. and others' No. 2 Varnum, NE cor. NW NW, Section 5-9-6, Earlsboro Pool, is a cellar. Amerada Petroleum Corp. made location for No. 3 Sullivan, SE cor. SW NW, Section 17-9-6. Burke-Greis Oil Co. and others moved the rig in for No. 1 Powell, NW cor. NE SW, Section 17-9-6. Carter Oil Co. made location for No. 1 Chowning, SW cor. NW SW, Section 19-9-6. Amerada Petroleum Corp. and Dixie Oil Co. made location for No. 1 Scott, NW cor. SW, Section 19-9-6. Amerada Petroleum Corp. is building the rig for No. 1 Earles, NW cor. SE, Section 32-9-6.

Sinclair Oil & Gas Co. and Continental Oil Co. made location for No. 3 J. Warrior, SW cor. SE NW, Section 17-9-7, East Seminole Pool. Independent Oil & Gas Co. and White Eagle Oil & Refining Co. made location for No. 5 L. Davis, SE cor. SW SE, Section 2-7-6, Little River Pool. Magnolia Petroleum Co. made location for No. 5 Cruse, SW cor. SE SE, Section 2-7-6. Gypsy Oil Co. staked location for No. 4 Renton, NW cor. NE NE, Section 11-7-6.

Magnolia Petroleum Co. made location for No. 3-B Harjo, SE cor. NE NE, Section 14-7-6. Gypsy Oil Co. made location for No. 4 Canard, SE cor. NE NE, Section 22-7-6. The Texas Company has the cellar dug for No. 8 D. Hotulke, NW cor. SW NW, Section 23-7-6. Independent Oil & Gas Co.'s No. 14 Harris, SW cor. NW NW, Section 23-7-6, is a cellar. Shell Petroleum Corp. made location for No. 4-A Hotulke, NW cor. NE NW, Section 23-7-6. Continental Oil Co. and Shaffer Oil & Refining Co. made location for No. 6 Harris. Mid-Continent Petroleum Corp. made location for No. 11 Smith, SW cor. NW SE, Section 5-7-7, East Little River Pool.

Sinclair Oil & Gas Co. has the cellar dug for No. 7 Phillips, SE cor. Section 5-7-7. Indian Territory Illuminating Oil Co.'s No. 2 Mathis, NW cor. SW, Section 13-5-7, is a cellar. Magnolia Petroleum Co. made location for No. 1 Parney, NE cor. SE, Section 14-5-7. Mid-Continent Petroleum Corp. made location for No. 16 Fleet, SW cor. SE SE, Section 7-5-8. Louisiana Oil Refining Corp.'s No. 6 Reed, NW cor. NE NE, Section 18-5-8, Allen Pool, is drilling at 972 feet.

Burke-Greis Oil Co. and others' No. 1 Nevins, NE cor. SE SW, Section 32-10-6, Earlsboro Pool, has been completed for 905 bbls. in Wilcox sand at 4,410-31 feet. Gypsy Oil Co.'s No. 2 Jones, SE cor. NE, Section 11-8-6, Carr City Pool, made 70 bbls. at 4,700 feet after plugging back from 4,854 feet in Wilcox sand. Continental Oil Co. and Shaffer Oil & Refining Co.'s No. 2 Harris, SW cor. SE SW, Section 4-7-7, Little River Pool, is dry and abandoned at 4,466 feet in Wilcox sand. No. 3 Harris, NW cor. SW, Section 4-7-7, flowed 1,327 bbls. in Wilcox sand at 4,160-69 feet.

Amerada Petroleum Corp.'s No. 1 Hotulke, SE cor. SW SE, Section 22-7-6, Little River Pool, is dry and abandoned at 4,232 feet in Wilcox sand. Shell Petroleum Corp.'s No. 2-A Hotulke, SW cor. NE NW, Section 23-7-6, made 508 bbls. in sand at 3,105-40 feet. The Texas Company's No. 1 Dindy, SW cor. NE SW, Section 24-7-6, is dry and abandoned at 3,270 feet in Cromwell sand. The Prairie Oil & Gas Co.'s No. 2 Raitman, NE cor. SE NW, Section 18-9-6, made 4,520 bbls. in Wilcox sand at 4,214-27 feet. Producers & Refiners Corp.'s No. 2 Thomas, SE cor. NW, Section 5-7-7, has been completed for 2,215 bbls. in Wilcox sand at 4,211-24 feet.

Stephens County

Meridian Gas Co. moved rig material in for No. 1 Collins, C NE NE, Section 12-1-9w. Mid-Texas Oil Co. made location for No. 1 Massey, NE cor. NW, Section 36-1s-6w. Pace and others' No. 1 Johnson, SE cor. NW, Section 16-2s-7w, is rigging up. Lesh & McCall's No. 1 Wilson, SW cor. NE, Section 17-2s-7w, is drilling at 1,430 feet.

Magnolia Petroleum Co.'s No. 2 Kagay, NW cor. SW NW SW, Section 34-1s-8w, has been completed for 40 bbls. in sand at 2,215-18 feet. Pace and others' No. 9 McMasters, SW cor. NE SE NE, Section 13-2s-8w, made 20 bbls. in sand at 1,490-04 feet.

Tillman County

Chenault & Staley made location for No. 1 Crane, NE cor. SE, Section 25-4s-14w. Dean & Adkinson made location for No. 1 Kent, NW cor. Section 6-5s-14w.

Creek County

Gled Oil Co.'s No. 1 Monday, NW cor. NE SW, Section 25-19-8, is rigging up. Independent Oil & Gas Co. and W. T. Campbell made location for No. 1 L. Davis, SE cor. NW SE, Section 20-18-8. Sooner Oil Co.'s No. 1 Calvin, NW cor. SE SE, Section 31-18-11, is drilling at 600 feet. J. H. Wright estate's No. 25 Tahkaney, NW cor. NE NW NW, Section 24-17-10, is drilling at 1,854 feet. The Carter Oil Co.'s No. 7 B. Durant, an old well being deepened, is now drilling at 3,217 feet.

Wells and others' No. 3 Tahledge, CWL NW NW, Section 10-18-11, has been abandoned at 1,890 feet. The Texas Company's No. 2 Baker, SE cor. NE SE, Section 14-17-10, has been completed for 30 bbls. in sand at 1,880-1,929 feet. Texas Pacific Coal & Oil Co.'s No. 8 Beaver, SW cor. NW NW, Section 17-16-9, made a 15-bbl. well in sand at 2,658-78 feet. Carter Oil Co.'s No. 1 B. Durant, NE cor. Section 18-16-9, which was deepened to sand at 3,000-11 feet, made 1,016 bbls. The Prairie Oil & Gas Co.'s No. 3 McMahon, SE cor. NE NW, Section 10-17-9, was completed for 30 bbls. in sand at 2,015-35 feet.

Kay County

Decamp and others' No. 1 Sharp, C SE NE, Section 25-28-1w, is spudding. Parrish and others' No. 1 Whitesides, NE cor. SW SW, Section 25-28-1w, is spudding.

Le Flore County

Le Flore County Gas & Electric Co.'s No. 2 Jackson, NE cor. SW SW SE, Section 28-7-26, is drilling at 260 feet.

Muskogee County

Seminole Petroleum Co. moved a machine in for No. 1 R. Murrell, NW cor. SE SE, Section 16-15-18. Robinson Brothers' No. 4 H. Lewis, NW cor. SW NW NE, Section 8-13-16, is drilling at 850 feet. Bement Oil Co.'s No. 1 J. Bruner, CNL NE SE, Section 15-13-16, is rigging up. J. E. Neely's No. 11 M. Cherry, CSL SE NW, Section 14-14-16, is dry and abandoned at 1,505 feet.

Okfuskee County

Mid-Continent Petroleum Corp. has the rig up for No. 3 D. Dindy "B," SW cor. NE, Section 31-11-11. Sunray Oil Corp. has the rig on the ground for No. 2-A Wilson, NE cor. SE NW, Section 31-11-11. Regal Oil Co.'s No. 9 Douglas, CNL SE NE, Section 11-10-11, is rigging up.

Champlin Oil & Refining Co.'s No. 13 Jacobs, SE cor. Section 15-11-11, has been completed for 6 bbls. in sand at 1,630-70 feet. Mid-Continent Petroleum Corp.'s No. 2 D. Dindy "C," SW cor. SE NE, Section 31-11-11, made 22,000,000 feet of gas in sand at 3,118-29 feet.

Okmulgee County

Whitfield and others' No. 4 Grayson, NE cor. SE NW SW, Section 3-15-11, is rigging up. Getzendaner and others' No. 6 Coleman, CWL NW SW, Section 29-15-11, is rigging up. Kirkland & Son moved a machine in for No. 4 M. Prince, CEL NW NW, Section 20-15-13. Foreman & Wise's No. 6 L. Rowe, NW cor. NE NE, Section 10-15-14, is drilling at 600 feet. I. L. Lavine and others' No. 1 Holcomb, SW cor. NW SE, Section 24-14-12, an old well being deepened, drilling at 2,600 feet. Penrod & Thompson moved the rig in for No. 9 L. Reynolds, SW cor. SE NW, Section 15-13-14. F. Sheedy and others' No. 15 M. Myers, NW cor. SE SW, Section 23-13-14, is drilling at 700 feet.

Sheridan Oil Co.'s No. 2 Salee, SW cor. NE NW SW, Section 3-15-11, made 5 bbls. in sand at 2,245-64 feet after being deepened. Kirkland & Son's No. 4 Brooks, SW cor. SE SW, Section 17-15-13, made 8 bbls. in sand at 1,447-1,535 feet. Misener and Mid-Continent Petroleum Corp.'s No. 2 Lowery, CEL NE SW, ection 10-15-14, has been completed for 15 bbls. in sand at 887-1,003 feet.

Payne County

Transcontinental Oil Co. is building the rig for No. 1 Lincoln, NW cor. SE, Section 4-18-5.

Tulsa County

Superior Oil Corp.'s No. 1 Johnson, SE cor. NE NW, Section 18-19-12, is drilling at 600 feet.

Wagoner County

H. H. Orr's No. 4 B. Grayson, NE cor. SE SE SW, Section 34-17-18, made 25 bbls. in sand at 409-21 feet after deepening. J. L. Dixon and others' No. 2 Brown, SW cor. NW, Section 36-16-17, has been completed for 2,000,000 feet of gas in sand at 870-86 feet.

PRODUCTION IN SEMINOLE AREA

Average daily production of the Seminole Field for the week ending August 29 is as follows:

Seminole Pool

Company, farm—	Location	Wells	Prod.
Amerada:			
Fixico	23-9-6	2	74
Killingsworth	23-9-6	4	510
Rentie	23-9-6	3	306
Atlantic:			
Cudjo, N.	35-9-6	3	362
Barnsdall:			
Carter	24-9-6	6	211
Henry	14-9-6	2	468
Jones	34-9-6	4	488
Carter Oil:			
B. Carter	24-9-6	2	40
F. Carter	23-9-6	3	86
Creamer	34-9-6	1	9
Cudjo, R.	35-9-6	4	116
Cudjo, W.	34-9-6	1	94
Gilliland	27-9-6	1	144
Grisso	23-9-6	4	169
Grisso, M.	15-9-6	1	224
Killings, G. F.	14-9-6	4	45
Killings, M. E.	23-9-6	12	4,164
Knapp	13-9-6	1	29
Lukes	27-9-6	5	1,003
Pounder	34-9-6	2	173
Simpson	35-9-6	2	134
Strothers	34-9-6	4	261
Vierson	23-9-6	1	12
Sanford	16-9-6	1	219
Empire:			
Gross	25-9-6	1	50
Wilson	34-9-6	2	278
Gypsy:			
Butler	35-9-6	4	637
Carter	24-9-6	3	774
Cudjo	34-9-6	4	427
Fixico	26-9-6	7	51
Harjo	25-9-6	3	337
Wolfe	26-9-6	5	467
Independent:			
Fixico, F	23-9-6	3	473
Harjo	25-9-6	2	35
Butler	35-9-6	3	604
Fixico, T.	26-9-6	5	247
Jones	26-9-6	4	353
I. T. I. O.:			
Allen	25-9-6	2	43
Bowlegs	26-9-6	12	1,990
Goodin	23-9-6	4	229
Harjo	23-9-6	3	51
James	24-9-6	2	45
Reed	24-9-6	1	8
Kingwood:			
Johnson	22-9-6	3	460
Magnolia:			
Boren	2-8-6	1	4

Company, farm—	Location	Wells	Prod.
Franks	25-9-6	3	206
Mid-Continent:			
Rentie	14-9-6	9	454
Tayeche	24-9-6	5	166
Phillips:			
Strothers	27-9-6	2	88
Prairie:			
Cudjo	35-9-6	3	489
Franks	35-9-6	6	896
Giblet	35-9-6	3	1,267
Gross	25-9-6	5	27
Mason	36-9-6	1	51
Spencer	13-9-6	1	6
Strothers	27-9-6	8	1,671
Tiger	1-8-6	1	32
Pure Oil:			
Strothers	26-9-6	17	3,759
Strothers, B.	36-9-6	4	653
Strothers, C.	34-9-6	1	353
Shell:			
Harber	22-9-6	1	164
Lasley	22-9-6	2	34
Sinclair:			
Carter	13-9-6	2	22
Cudjo "A"	35-9-6	6	477
Cudjo "B"	35-9-6	4	541
Dicey	22-9-6	2	459
Fixico	23-9-6	4	447
Superior:			
Cudjo	35-9-6	4	107
Noble	15-9-6	1	1
Texas:			
Mayhue	14-9-6	1	Off
Strothers	2-9-6	1	60
Tidal:			
Carter	24-9-6	4	110
Fixico	26-9-6	7	1,525
Harjo	25-9-6	1	16
Harjo, T.	23-9-6	3	48
Turman:			
Cudjo	35-9-6	4	555
Grisso	35-9-6	1	18
Jones	34-9-6	4	1,020
Total		273	32,626

East Seminole Pool

Barnsdall:			
Ke-pa-ya	7-9-7	1	19
Continental:			
Boenig	17-9-7	1	40
Johnson	18-9-7	3	2,124
Continental & Sinclair:			
Perry	18-9-7	2	527
Devonian:			
Harjo	18-9-7	1	4
Gypsy:			
Harjo	18-9-7	1	230
Magnolia:			
Drewery	18-9-7	2	7
Prairie:			
Stubbs	18-9-7	2	60
Shaffer:			
Hangler	19-9-7	1	13
Sinclair:			
Bob Coody	18-9-7	3	1,648
D. Coody	17-9-7	1	106
Johnson, B.	18-9-7	1	29
Johnson, G.	18-9-7	1	344
Thompson, B.	18-9-7	1	951
Warrior, J.	17-9-7	1	40
Warrior, S.	17-9-7	1	62
Total		23	6,204

Searight Pool

Amerada:			
Johnson	4- 9-6	1	17
Nicey	3- 9-6	1	22
Strothers	3- 9-6	2	199
Barnsdall:			
Johnson	22-10-6	1	26
Barnsdall:			
Jackson	5- 9-6	2	20
Burke-Greis:			
Varnum	32-10-6	1	848
Carter:			
Davis	4- 9-6	3	164
I. T. I. O.	11- 9-6	1	331
Frazier	3- 9-6	5	638
Mayhue	11- 9-6	1	1,551
Kiker	2- 9-6	1	15
Skiff	10- 9-6	1	67
Mandler	3- 9-6	2	5
Slick	11- 9-6	2	852
Scott	26-10-6	1	10
Steward	10- 9-6	1	319
Carter et al:			
Strothers	11- 9-6	2	1,188
Gypsy:			
Cudjo	4- 9-6	3	411
Nevins	32-10-6	3	479
Magnolia:			
Varnum	32-10-6	3	436
W. F. Varnum	5- 9-6	1	52
Mid-Continent:			
Grayson	34-10-6	4	21
Saloche	33-10-6	6	425
Mid-Cont. and Homaokla:			
Nevins	32-10-6	4	971
Papoose:			
Marks	32-10-6	1	387
Pine:			
Lula	4- 9-6	1	14
Prairie:			
Cannon	33-10-6	1	2
J. Carter	10-9-6	1	2
Houch	33-10-6	1	2
Hurford	33-10-6	1	13
Kincaid	33-10-6	2	61
Wimer	22-10-6	1	15
Pure:			
Aldridge	3- 9-6	3	619
Shell:			
Strothers	3- 9-6	4	187
Crump	32-10-6	1	Off
Sinclair:			
Polly	3- 9-6	4	1,304
Superior:			
Varnum	4- 9-6	1	24
Texas:			
Fleet	4- 9-6	1	17
Twin States:			
Varnum	4- 9-6	2	125
Wilcox:			
Chupco	4- 9-6	7	223
Total		84	12,063

Little River Pool

Company, farm—	Location	Wells	Prod.
Amerada:			
Hotulke	22-7-6	1	Off
Nitey	2-7-6	3	253
Amerada-Wilcox:			
Fore	35-8-6	2	481
Barnsdall:			
Cotcha	23-7-6	3	926
Hotulke	22-7-6	3	701
Walker	4-7-6	1	11
Blackwell:			
Baker	11-7-6	4	892
Nitey	35-8-6	5	248
Talley	14-7-6	4	960
Bryan & Emery:			
Walker	4-7-6	1	13
Carter:			
Cotcha, M.	23-7-6	2	75
Cudjo, L.	23-7-6	2	259
Factor	26-7-6	1	38
Fish	36-8-6	4	577
Harjo, C.	11-7-6	3	2,294
Harjo, M.	13-7-6	4	491
Jackson	11-7-6	4	595
Larney, B.	26-7-6	2	378
Larney, J.	24-7-6	4	1,544
Lena	10-7-6	1	431
Moore	11-7-6	2	87
Tewee	14-7-6	6	797
Thomas	11-7-6	1	365
Walker, J.	24-7-6	1	859
Wilson	12-7-6	1	213
Champlin:			
Tewee	14-7-6	3	991
Continental:			
Cosar	36-8-6	7	848
Cosar, M.	25-8-6	1	280
Continental & Fisher:			
Milsey	11-7-6	2	365
Continental & Shaffer:			
Harrison	4-7-7	2	1,308
Empire:			
Charty	24-7-6	1	69
Coker	13-7-6	2	478
Cotcha	27-7-6	2	25
Sandlin	3-7-6	1	10
Gypsy:			
Brown, C.	33-8-6	1	279
Brown, M.	33-8-6	1	931
Campbell	33-7-6	1	4
Gypsy:			
Conard	22-7-6	2	211
Cosar, W.	36-8-6	2	188
Cotcha	23-7-6	13	2,881
Denmark	11-7-6	3	854
Hulhoke	14-7-6	10	1,016
Mungee	1-7-6	1	Off
Payne	5-7-7	3	1,509
Pottie	35-8-6	4	251
Renton	11-7-6	2	132
Independent:			
Carpenter	27-7-6	3	442
Davis, R.	13-7-6	6	1,564
Reed	26-7-6	1	12
Tewee	14-7-6	6	1,023
Williams	15-7-6	1	516
Independent & Highway:			
Harris	23-7-6	9	1,847
Indep. & White Eagle:			
Davis	2-7-6	4	500
I. T. I. O.:			
Campbell	1-7-6	1	215
Dungan	35-8-6	3	289
House, M. A.	1-7-6	1	32
House, W. E.	1-7-6	1	8
House, "B"	2-7-6	4	502
Hull	26-8-6	2	328
Jackson	1-7-6	3	233
McCulla	1-7-6	3	601
Nitey	2-7-6	5	104
Phoebe "A"	36-8-6	2	16
Phoebe "B"	36-8-6	2	7
Reed	1-7-6	1	Off
Soketheche	1-7-6	3	137
Magnolia:			
Cruse	2-7-6	4	133
Denby	11-7-6	4	272
Harjo, A.	14-7-6	2	67
Harjo, B.	14-7-6	2	178
Pottie	35-8-6	4	25
Reed, E.	31-8-7	1	35
Reed, I.	22-7-6	3	334
McCulloch & Sands:			
Harrison	4-7-6	1	Off
Mid-Continent:			
Brunner	11-7-6	4	127
Eleck	23-7-6	1	18
Smith	5-7-7	9	14,402
Wadsworth	36-8-6	4	75
W. B. Pine:			
Bean	13-7-6	1	56
Hoyecha	26-8-6	7	1,334
Pine-Phillips:			
Pottie	35-8-6	1	71
Prairie:			
Chilcoat	25-8-6	3	484
Coker	1-7-6	2	635
Gibson	14-7-6	5	708
Harris	14-7-6	4	816
House	2-7-6	4	113
Johnson	24-7-6	2	1,012
Lustey	5-7-7	2	41
Moppin	24-7-6	2	198
Reed	13-7-6	2	761
Talley	14-7-6	4	545
Thomas	5-7-7	2	2,088
Williams	15-7-6	2	64
Wood	26-7-6	3	148
Carr	9-7-7	1	411
Prairie & Amerada:			
Sunny	14-7-6	5	796
Prairie & Slick:			
Cudjo	26-7-6	4	490
Pure:			
Brinson	24-7-6	3	1,083
Cotcha	14-7-6	11	2,052
Harjo	11-7-6	4	991
Hollins	11-7-6	1	418
Reiter-Foster:			
Bunyard	14-7-6	2	521
Jefferson	31-7-6	1	12
McCann	33-7-6	1	35
Shaeffer:			
Narcombe	36-8-6	2	40
Shell:			
Caesar	11-7-6	1	75
Glass	26-7-6	1	Off
Hotulke	23-7-6	5	752
Johnson	13-7-6	4	1,000
Sinclair:			
Blanton	11-7-6	1	180
Cosar	30-8-6	3	838
Haney	12-7-6	1	50
Phillip	5-7-7	1	1,594
Tewee	14-7-6	2	1,380
Sinclair & Kingwood:			
Pompey	24-7-6	1	144
Skelly:			
Carl	14-7-6*	2	1,357
Snowden-McSweeney:			
Tiger	13-7-6	2	2
Superior:			
Potulka	31-8-6	1	18
Texas:			
Brooks	25-8-6	1	11
Coker	1-7-6	3	4
Chilcoat	4-7-7	1	80
Janey	11-7-6	6	890
Texas & Independent:			
Hutulke	23-7-6	6	1,576
Hutulke	22-7-6	3	474
Tidal:			
House	1-7-6	1	323
Johnson	1-7-6	1	18
Twin State:			
Lowe	25-8-6	1	55
Total		336	76,906

Earlsboro Pool

Amerada:			
Anderson	15-9-5	1	234
Cowden	4-9-5	7	1,062
Rogers	3-9-5	2	71
Sullivan	17-9-6	1	1,697
Amerada & Sinclair:			
Foreman	18-9-5	1	104
Barnsdall:			
Brown	10-9-5	3	1,039
Bruner, F.	2-9-5	2	152
Bruner, N.	10-9-5	1	234
Cudjo	14-9-5	1	23
Davis, D.	11-9-5	3	95
Davis, J.	11-9-5	4	897
Davis, M.	11-9-5	2	24
Gibson	9-9-5	7	794
Hern	15-9-5	1	1
Ingram	1-9-5	6	270
Pack, S.	10-9-5	4	72
Peter	10-9-5	2	58
Sango	1-9-5	2	1,370
Sebalka	15-9-5	1	156
Sullivan, H.	11-9-5	1	5
Sull-Harjo	10-9-5	2	13
Wasutke	12-9-5	3	441
Burke-Greis:			
Wisner	6-9-6	2	217
Burke-Greis & Red Bank:			
Mays	1-9-5	3	1,618
Carter:			
Davis	13-9-5	3	75
James	6-9-6	3	1,309
Carter et al:			
Gilliam	13-9-5	2	1,510
Continental:			
Kays	2-9-5	2	77
Spencer	12-9-5	4	498
Cosden, J. S., Inc.:			
Anderson	13-9-5	2	1,774
Sarber	13-9-5	1	71
Empire:			
Barker	12-9-5	1	37
Edmondson	3-9-5	2	45
Empire & Marland:			
Anderson	13-9-5	2	399
Empire & Amerada:			
Bullock	8-9-5	2	791
Henry	8-9-5	1	2,037
Gypsy:			
Bruner	10-9-5	4	1,044
Carter, B.	11-9-5	7	1,305
Earl	16-9-5	1	9
Hunick	5-9-5	2	1,291
Lottie	31-10-6	1	Off
Noble	12-9-5	4	631
Peter	10-9-5	1	62
Sango	1-9-5	13	1,389
State	16-9-5	3	186
Wisner	13-9-5	1	237
Gypsy & Devonian:			
Payne	18-9-6	1	3,902
Independent:			
Bruner	10-9-5	3	200
Sullivan	10-9-5	1	12
Knapp	8-9-5	2	981
Indep.-Margay:			
Gains	11-9-5	3	103
Magnolia:			
Anderson A	18-9-6	5	11,741
Anderson, D. W.	18-9-6	2	6,344
Bryant	9-9-5	5	42
Cowden	4-9-5	1	22
Dixon	12-9-5	1	17
Edmondson	3-9-5	1	4
Germany	30-9-5	1	9
Gilliam	13-9-5	3	2,606
Holmsley	11-9-5	6	14
Hyde	13-9-5	2	31
Ingram	10-9-5	1	17
Lena	10-9-5	3	31
Moore	24-9-5	1	730
Seay	12-9-5	9	128
Simpson	10-9-5	4	238
Sparks	11-9-5	6	74
Sullivan	12-9-5	2	162
Mid-Continent:			
McCumber	9-9-5	4	34
Rogers	5-9-5	4	2,671
Mid-Kansas:			
Anderson	14-9-5	1	33
Phillips:			
Dunaway	14-9-5	1	20
Reade	8-9-5	2	1,411
Prairie:			
Baker	24-9-5	4	719
Calkins	17-9-5	1	6,274
Davis	13-9-5	3	460
Graham, C.	3-9-5	1	6
Graham, O.	10-9-5	4	759
James	6-9-6	2	Off
Reitman	18-9-6	3	5,659
Stidham	11-9-5	9	548
Prairie & Skelly:			
Campbell	6-9-6	7	2,542
Skelly & Whitney:			
Farjo	24-9-5	1	7
Wisner	18-9-6	1	61
Shaffer:			
Clark	1-9-5	3	188
Shell:			
Bayless	17-9-5	1	12
Hearn	13-9-5	1	50
Spencer	12-9-5	2	1,338
Sinclair:			
Alexander	36-10-5	1	692
Foreman	18-9-5	1	15
Miller	24-9-5	1	741
Sango	2-9-5	4	1,108
Skelly:			
Mays	1-9-5	4	288
Shepard	6-9-6	4	1,843
Spencer	12-9-5	1	166
Skelly & Atlantic:			
Cherry	6-9-6	4	351
Lottie	6-9-6	3	1,019
Varnum	5-9-6	1	449
Superior:			
Ingram	1-9-5	2	1,144
Songster	8-9-5	1	1,127
Walker	2-9-5	2	1,107
Texas:			
Anderson	9-9-5	8	118
Brown	10-9-5	8	79
James	6-9-6	2	170
Rogers	5-9-5	5	591
Wilmott	10-9-5	6	87
Tidal:			
Walker	35-10-5	2	1,411
Watkins	9-9-5	7	1,984
Twin States:			
Barker	12-9-5	3	38
Hern	2-9-5	2	41
Magruder	7-9-5	2	784
Total		313	90,977

Carr City Pool

Amerada:			
Reed	12-8-5	1	109
Barnsdall:			
Coker	11-8-5	9	1,786
Fife	14-8-5	2	177
Tully	10-8-5	1	8
Carter:			
Coker	2-8-5	2	2,209
Rogers	2-8-5	1	...
Empire:			
Cluck	11-8-5	12	3,823
Gypsy:			
Coker	10-8-5	1	11
C. Coker	2-8-5	1	1,061
Fife	14-8-5	1	15
I. T. I. O.:			
Simpson	10-8-5	1	Off
Tully	10-8-5	1	Off
Magnolia:			
"Fee"	11-8-5	3	313
Killing	14-8-5	1	6
Prairie:			
Billington	11-8-5	10	1,626
Mitchell	15-8-5	1	63
Sinclair:			
Bean	11-8-5	3	288
Harjo	11-8-5	3	467
Total		53	11,962

Maud Pool

Amerada:			
Ballard	1-8-4	1	73
Fehling	7-8-5	1	49
Gossland	8-8-5	3	119
Gravel	1-8-4	1	14
Hallum	1-8-4	4	1,687
Amerada & Barnsdall:			
Wallace	17-8-5	4	327
Barnsdall & Hull:			
Green	20-8-5	3	140
Continental & Shell:			
Everetts	18-8-5	2	51
Darby:			
Ketcham	19-8-5	1	Off
Empire:			
Smith	8-8-5	2	1,151
Gypsy:			
Bournasa	7-8-5	4	62
Gossland	7-8-5	1	1,238
Miller	18-8-5	8	457
Smith	20-8-5	1	56
Independent:			
Harding	18-8-5	5	210
I. T. I. O.:			
State	16-8-5	1	94
Laurel O. & G.:			
Billington	18-8-5	3	134
Magnolia:			
Billington	8-8-5	4	86
Green	20-8-5	3	179
Mid-Continent:			
Shelton	18-8-5	3	36
Phillips:			
Hudson	18-8-5	4	168
Wallace	17-8-5	2	81
Pine:			
Lingefelt	18-8-5	2	50
Smith	8-8-5	3	621
Prairie:			
Campbell	18-8-5	8	136
Prairie & White Eagle:			
Villines	20-8-5	1	3
Pure:			
Lindly	18-8-5	5	385
Urbansky	19-8-5	2	52
Wiley	8-8-5	4	995
Shell:			
Jordan	9-8-5	1	1,084
Sinclair:			
Bellars	19-8-5	10	450
Calvin	7-8-5	3	222
Lewis	6-8-5	2	59
Skelly & Lenox:			
Green	20-8-5	1	198
Skelly & Margay:			
Lingefelt	18-8-5	4	175
Texas:			
Calvin	7-8-5	8	234
Tidal:			
Dunn	12-8-4	1	41
Everett	18-8-5	3	59
Smith	8-8-5	1	97
Twin State:			
Calvin	7-8-5	2	110
Wilcox:			
Smith	8-8-5	7	2,035
Total		129	13,417

Mission Pool

Company, farm—	Location	Wells	Prod.
Amerada:			
Rice	5-8-6	2	860
Carter:			
Fuswa	18-8-6	3	543
Melisse	9-8-6	1	622
Micco	8-8-6	2	362
Continental:			
Mains	7-8-6	4	1,002
Darby:			
Judy	1-8-5	1	71
Gypsy:			
Baby	6-8-6	1	Off
Barkus, N.	6-8-6	10	4,355
Barkus, S.	7-8-6	1	22
Dosar	7-8-6	5	886
Hardy	7-8-6	7	217
Harjoche	7-8-6	3	53
Micco, L.	8-8-6	2	36
Micco, S.	8-8-6	1	8
Mission	5 & 6-8-6	7	1,049
Mosar	1-8-5	4	704
Independent:			
Lawson	1-8-5	5	655
Independent & Kistler:			
Payne	7-8-6	4	1,189
McMahon et al:			
Harjo	7-8-6	2	773
Mid-Continent:			
Ripley	13-8-5	1	100
Mid-Kansas:			
Moore	7-8-6	1	Off
Minnehoma:			
Neal	7-8-6	4	840
Pine:			
Harjo	6-8-6	2	669
Micco	8-8-6	1	25
Prairie:			
Crain	7-8-6	1	118
Melton	6-8-6	3	1,023
Micco	5-8-6	1	5
Townsend	6-8-6	2	1,063
Prairie & Slick:			
Nelly	12-8-5	1	78
Prairie & Gypsy:			
Owens	18-8-6	2	400
Shaffer:			
Weaver	12-8-5	3	1,150
Shell & Continental:			
Herndon	7-8-6	3	886
Shell & Papoose:			
Maines	7-8-6	8	860
Sinclair:			
Hardy	7-8-6	4	923
Sinclair & Lenox:			
Judy	1-8-5	1	53
Tidal:			
Nelly	12-8-5	5	1,912
Twin State:			
Hayes	8-8-6	2	1,156
Judy	6-8-6	2	780
Ripley	12-8-5	2	170
Total		113	25,618

Bowlegs Pool

Amerada:			
Roscoe	15-8-6	6	775
Atlantic:			
Baker	10-8-6	4	212
Fleet	23-8-6	3	49
Grayson	13-8-6	3	307
Jones, A.	16-8-6	2	18
Jones, C.	9-8-6	1	28
Barnsdall:			
McNac	28-8-6	1	20
Murrow	11-8-6	4	280
Carter Oil:			
Bowlegs	15-8-6	4	374
Burden	23-8-6	2	228
Harjoche	14-8-6	6	458
Hilly	23-8-6	3	236
Jones	11-8-6	4	475
Walker	15-8-6	4	429
Wise	23-8-6	11	1,318
Dixie:			
Culley	11-8-6	1	35
Empire:			
Lacy	14-8-6	6	252
Wise	23-8-6	2	140
Gypsy:			
Bowlegs	22-8-6	1	5
Cumsey	10-8-6	4	513
Grayson	13-8-6	4	457
Harjoche	10-8-6	3	247
Jones	11-8-6	1	68
Walker	15-8-6	7	1,076
Wise	23-8-6	2	147
I. T. I. O.:			
Barnett	24-8-6	2	Off
Barnett "B"	23-8-6	1	25
Billington	22-8-6	3	266
Bowlegs	22-8-6	9	1,296
Davis	13-8-6	4	75
Fay	13-8-6	9	1,128
Goforth	15-8-6	12	1,225
Livingston	15-8-6	10	1,358
Lizzie	13-8-6	3	328
Walker	15-8-6	8	1,084
Williams	12-8-6	1	210
Wilmott	15-8-6	4	341
Work	24-8-6	1	13
Youngblood	24-8-6	2	51
Magnolia:			
Davis	13-8-6	3	318
Davis, M.	13-8-6	1	78
Hammond	10-8-6	8	362
Rhodes	12-8-6	5	410
Van Buskirk	9-8-6	4	346
McCulloch:			
Bowlegs	22-8-6	1	60
Mid-Continent:			
Baker	10-8-6	4	143
Smith	12-8-6	6	493
Minnehoma:			
Bowlegs	15-8-6	1	62
Prairie:			
Gahagan	23-8-6	3	234
Harber	10-8-6	8	1,298
Jones, N.	3-8-6	1	147
Jones, G.	11-8-6	3	258
Templeton	12-8-6	4	1,798
Whitney	23-8-6	4	200
Pure Oil:			
Reed	14-8-6	14	2,342
Strother "D"	11 & 14-8-6	4	342
Strother "F"	10-8-6	7	2,010
Shaffer:			
Lacy	14-8-6	3	420
Sinclair:			
Shell:			
Taylor	16-8-6	5	26
Cumsey	10-8-6	4	919
Ellen	11-8-6	5	604
Harjo	14-8-6	3	693
Jones	9-8-6	7	317
Taylor	10-8-6	4	690
Taylor, W.	10-8-6	3	560
Walker	22-8-6	4	745
Texas:			
Reed	14-8-6	11	552
Tidal:			
Grayson	13-8-6	4	465
Harjoche	10-8-6	6	748
Total		298	33,198

St. Louis Pool

Amerada:			
Richardson	16-7-4	1	28
Atlantic:			
Burke	16-7-4	2	443
Mildrum	15-7-4	1	141
Atlantic-Darby:			
Standridge	10-7-4	1	83
Barnsdall:			
Stahl	30-7-4	3	651
Blackwell:			
Cherry	25-7-4	3	630
Lewis	24-7-4	2	120
Carter:			
Adkin	2-7-4	1	Off
McGee	26-7-4	1	25
Darby:			
Harber	23-7-4	1	35
Nixon	9-7-4	2	226
Youngblood	16-7-4	4	902
Empire:			
Bettis	17-7-4	1	233
Jackson	36-8-4	1	419
State	36-7-4	1	158
Gypsy:			
Bruno	25-7-4	4	83
Collins	25-7-4	4	585
Dodson	26-7-4	4	120
Green	17-7-4	3	1,687
Johnson	29-7-4	1	13
LeClair	23-7-4	4	1,723
Rosemond, No. 1	26-7-4	4	503
Stahl	30-7-4	8	216
Home Gas Co.:			
St. Louis	14-7-4	1	262
Houston Oil:			
Wyatt	17-7-4	3	1,983
Independent:			
Barrow	1-7-4	3	764
Blandin	30-7-4	5	876
Youts	19-7-4	8	5,620
Independent-Darby:			
Brown	14-7-4	2	13
Carson	23-7-4	1	Off
Davis	15-7-4	1	4
Freid	23-7-4	2	103
Jordon	10-7-4	1	25
LeClair	23-7-4	1	59
Pappan	16-7-4	2	724
Pillar	15-7-4	1	8
Standridge	14-7-4	3	31
Wallace	14-7-4	4	79
Curley	22-7-4	1	4
Independent et al:			
Hambry	14-7-4	2	22
Was	30-7-5	1	28
Independent-Range:			
Null	35-8-4	1	13
Independent-Skelly:			
James	16-7-4	2	581
Independent-Westland:			
Booze	9-7-4	1	134
Rhodd	16-7-4	4	1,261
I. T. I. O.:			
McGee	26-7-4	1	125
Shobe	35-8-4	2	181
Weams	21-7-5	1	86
I. T. I. O.-Sinclair:			
Woodard	18-7-5	1	55
Inter-Ocean:			
Coley	24-7-4	1	18
McGee	23-7-4	6	268
Irvin & Marten:			
Kelly	2-7-4	3	1,194
Magnolia:			
Banta	14-7-4	3	284
Billington, C.	11-7-4	1	12
Brandenburg	18-7-5	5	1,389
Bullock	18-7-5	1	1
Caudle	13-7-4	2	605
Cherry "A"	25-7-4	5	560
Cherry "B"	26-7-4	3	177
Clour	11-7-4	2	15
Davis, C. E.	24-7-4	1	9
Davis, Frank	15-7-4	2	14
Engle	34-7-4	1	60
Fyke, Geo. "A"	20-7-5	1	447
Fyke, Geo. "B"	20-7-5	2	259
Fyke, L. L.	20-7-5	1	9
Fyke, Tulle "A"	20-7-5	1	88
Fyke, Tulle "B"	20-7-5	1	396
Fyke, Tulle "C"	20-7-5	1	37
Fyke, Tulle "D"	20-7-5	2	259
Fyke, Tulle "E"	20-7-5	1	Off
Green, B. M.	13-7-4	1	11
Green, Lulla	13-7-4	1	Off
Guinn	20-7-5	1	27
Harden	12-7-4	2	237
Hatcock, C. D.	11-7-4	1	10
Hatcock, Lee	11-7-4	1	75
Harper, J. J.	19-7-5	1	14
Harper, James	19-7-5	2	7
Hembree	19-7-5	4	265
Jones "A"	18-7-4	1	84
Kiner	17-7-5	1	5
Latimer	17-7-4	2	154
Lous, J. L.	15-7-4	1	17
Mull	15-7-4	1	2
Nicklass	31-7-5	2	70
Nona	11-7-4	1	44
Pugh	7-7-5	1	1
Richardson	17-7-4	1	72
Risenhoover	14-7-4	4	9
Robbins, J. M.	15-7-4	4	187
Robbins, Pearl	15-7-4	1	52
Rowe, I.	18-7-5	1	14
Rowe, M.	18-7-5	1	6
Shipshewano	19-7-5	4	49
Singletary, D.	15-7-4	1	61
Singletary, F.	23-7-4	3	21
Singletary, T.	14-7-4	3	42
Tartar	15-7-4	1	282
Vieux, F.	13-7-4	1	10
Vieux, N.	13-7-4	1	Off
White, Roy	20-7-5	1	8
Wilborn, Mary	24-7-4	2	462
Wilborn, S. A.	24-7-4	6	809
Youts, Chas.	20-7-5	5	343
Younts, C. A.	19-7-5	4	453
Younts, H. E.	20-7-5	7	3,131
Magnolia-Pierce:			
Hubanks	17-7-4	2	980
McCulloch, et al:			
Bruno	25-7-4	5	927
Smith	25-7-4	6	865
Mid-Continent:			
Decker	8-7-4	1	100
Robbins	9-7-4	2	Off
Quinn	20-7-5	1	20
Mid-Kansas:			
Getzelman	25-7-4	4	831
Lunay	30-7-5	3	355
Minnehoma:			
Simms	16-7-4	1	382
Packard:			
Church	29-7-5	1	505
Panther:			
Town Lot	14-7-4	2	150
Phillips:			
Cherry	25-7-4	2	118
Grace	2-7-4	1	81
Lydick	24-7-4	1	22
Stahl	30-7-5	4	630
Prairie:			
Desmond	25-7-4	4	100
Ellison	25-7-4	4	355
Gammon	30-7-5	8	2,668
Hembree, A. O.	19-7-5	4	1,712
Hembree	18-7-5	1	15
Linn	30-7-5	4	601
Smith	30-7-5	3	50
Wolf	29-7-5	4	2,198
Younts	19-7-5	4	243
Prairie et al:			
Davis	18-7-5	4	83
Nesbit	18-7-5	2	254
Pugh	7-7-5	1	20
Prairie-Shaffer-Indep.:			
Cummings	17-7-4	2	566
Regan	17-7-4	2	2,696
Rice	17-7-4	1	264
Pure:			
Dodson	26-7-4	2	125
Thomas	26-7-4	4	4,612
Thrillkill	19-7-5	1	70
Tolen	1-7-4	1	135
Shaffer O. & R.:			
Cherry	23-7-4	4	122
Tolen	30-7-5	4	428
Shell:			
Smith	21-7-3	1	60
Stahl	30-7-5	1	58
Younts	28-7-5	1	22
Sinclair:			
Blandin	24-7-4	13	1,153
Brandenburg	7-7-5	3	807
Bruno	28-7-4	2	1,293
Coley	24-7-4	2	70
Gilbreath	25-7-4	2	793
M-Qua-Ka	11-7-4	1	Off
Nadash	29-7-5	4	406
Neeley	25-7-4	6	587
Neeley "B"	25-7-4	2	627
Nesbit	18-7-5	8	1,871
O'Kitchee	19-7-5	7	540
Sinclair, et al:			
Kelly "A"	2-7-4	1	609
Slick-W. Eagle:			
Latimer	16-7-4	1	48
Superior:			
Caudle	24-7-4	2	50
Jackson	36-8-4	1	85
Texas:			
Cherry	25-7-4	4	513
Zoeller	30-7-5	1	30
Tidal:			
Smith	26-7-4	1	20
Warner-Quinlan:			
Light	18-7-4	1	Off
Westheimer-Daube:			
Freid	24-7-4	5	618
Garrett	23-7-4	2	70
Westheimer-Gypsy:			
McGee	23-7-4	5	109
Wyatt:			
Fee	10-7-4	1	20
Total		413	68,521

ASHER POOL

Commerce Devel. Co.:			
Townsite	19-6-4	1	45
Independent:			
Gardiner	19-6-4	1	183
Prairie-Slick:			
Laster	19-6-4	5	6,030
Simms:			
Laster	19-6-4	3	5,437
Slick:			
Bledsoe	20-6-4	1	257
Alexander	19-6-4	1	53
Weldon	20-6-4	2	186
Slick-Amerada:			
Walker No. 1	19-6-4	1	269
Texola:			
Townsite	19-6-4	1	85
Total		16	12,545

Sasakwa Pool

Carter:			
Phillips	18-6-8	1	56
Spillman	7-6-8	1	14
Prairie:			
Patton	18-6-8	1	Off
Shell:			
Holatka	7-6-8	1	1,359
Signal:			
Bond	13-6-7	1	111
Sinclair:			
Davis "A"	7-6-8	4	4,808
Texas:			
Bryan	9-6-8	1	60
Twin State:			
Marshall	6-6-8	1	Off
Total		11	6,408

SOUTHWEST TEXAS FIELDS

(Continued from Page 58)

10, Survey 15, located 150 feet north and west lines, is derrick. W. R. Shankle's No. 2 Holbein, Survey 3, LasAnimas grant, located 150 feet north line, 450 feet west line, Block 11, Hogg Ridge Subdivision, location.

Alworth Field

Alworth, Stevens, Hill Co.'s No. 14 M. Garza, Survey 39, Block 8, located 204 feet southeast lines, 570 feet northeast lines, at 1,900 feet, standing.

Carolina-Texas Field

Carolina-Texas Oil Co.'s No. 8 Benavides, Survey 683, Block 12, located 150 feet south line, 450 feet west line, at 2,200 feet, is drilling. Foster Barsley's No. 6 Webster, NE SW, Survey 684, located 150 feet south and east lines, at 1,900 feet, drilling. Trapshooter Reilly Oil & Royalties Co.'s No. 2 Benavides, Survey 685, located 1,170 feet west line, 150 feet north line at 2,860 feet, drilling.

Schott Field—Webb

Livingston & Payne's No. 1 Guerra-Ochoa, Survey 58, located 917 feet east line, 470 feet south line, at 1,649 feet, standing.

Magnolia-Cole Field

Cole Petroleum Co.'s No. 67 Benavides, Survey 412, Block 12, located 313 feet east line, 160 feet north line, at 38 feet, standing. Magnolia Petroleum Co.'s No. 1 J. G. Valdez, Survey 754, Block 15, located 150 feet south and west lines, is derrick; No. 1 A. Benavides, N half Survey 660, located 660 feet south and east lines, is derrick; No. 1 M. Benavides, N half NW, Section 660, located 660 feet south and east lines, at 4.315 feet, drilling; No. 1 C. Benavides, Survey 662, located 660 feet north and east lines, at 100 feet, drilling.

Cole Gas Field

O. W. Killam's No. 12 Bruni, Survey 3, Adams Subdivision, Bruni lands, 330 feet southeast lines, 150 feet southwest lines, Mariano Arispe grant, has spudded in. John J. O'Hern's No. 1 Valdez, Survey 754, located 660 feet north and east lines, is location.

Jennings Field—Zapata

Blair & Acklin's No. 1 Trevino, Survey 66, Block 1, located 150 feet north and west lines, at 385 feet, showed large amount of oil; No. 15 Cuellar, J. M. Pereda Survey, 812 feet north line, 1,448 feet west line of O. W. Killam's 160-acre tract of 1,772-acre tract, is drilling at 740 feet. Killam-Duggan's No. 6 Cuellar, Survey 277, located 1,050 feet south line, 2,900 feet east line, at 1,240 feet, drilling. H. Muckelroy, Jr.'s No. 3 Trevino, Survey 412, Block 25, located 300 feet east line, 460 feet south line at 1,293-95 feet, in sand, preparing to set casing. South Texas Production Co.'s No. 1 Roy Jennings, Mira Flores Grant Survey, 18,055 feet southwest lines, 11,040 feet southeast lines, at 3,125 feet, drilling; No. 5 Joe Jennings, Cerrito Blanco Grant Survey, 2,775 feet northeast lines, 1,585 feet northwest lines, at 2,422 feet, reaming.

Mirando Valley Field

O. W. Killam's No. 1 Flores, Survey 240, located 850 feet southeast lines, 560 feet northeast lines, at 1,260 feet, drilling.

Somerset Field—Atascosa

Schimmel Production Co.'s No. 3 H. F. Gayle, C.E.P.I.&M. Survey, Block 2, 946 feet east of No. 1, location.

Yoast Field—Bastrop

The Texas Company's No. 8 Yoast, A. Garcia Survey, location.

Pettus Field—Bee

Mission Drilling Co.'s No. 4 Ray, 150 feet northwest of No. 1 Ray, at 750 feet, drilling in sand and shale. Nichols and others' No. 2 Hicks, Jose Miria Wanga Survey, 600 feet north line, 2,000 feet west line, at 2,362 feet, drilling.

Dobrowolski Field—Bexar

Amelia Balzart's No. 3 J. P. Adams, 150 feet from road, offsetting No. 1 Dobrowolski, has derrick up. F. H. Eckert's No. 4 Dobrowolski, 330 feet southwest of No. 3. location.

Joe Bruner Field—Caldwell

J. W. Allen's No.1 A. B. Jackson 50-acres, Spencer Morris Survey, 150 feet north and west lines, at 2,838 feet, rotary

moved off, will move on standard tools. Tip de Arman's No. 3 G. F. Carter, James Hinds Survey, 50 feet north and west lines, location. E. R. Brawn and C. O. Miller's No. 2 R. W. Carter, Gerren Hinds Survey, 300 feet north of No. 1, 150 feet north and west lines, at 2,680 feet, cleaning out hole showing considerable gas. Forest Oil Co.'s No. 1 M. H. Woods, Isaac Weldon Survey, Block 35, south central part of lease, location; No. 1 T. Enriquez, Luling Townsite, Block 32, center of Lot 30, location. T. C. Hadley's No. 1 J. M. Hanson, James Hinds Survey, 150 feet south and east lines of west half of east 20 acres of J. M. Hanson farm, at 2,640 feet, is shut down; No. 4 Merriwether, at 2,741 feet, swabbing much water and little oil. Humble Oil & Refining Co.'s No. 1-B J. L. Northcut, at 2,687 feet, drilling; No. 13 Moses-Baggett, James Hinds Survey, 450 feet east line, 1,189 feet south line, at 2,691 feet, drilling in Edwards. Humble Oil & Refining Co. and Luling Oil & Gas Co.'s No. 7 C. F. Dye, James Hinds Survey, 150 feet north line, 450 feet east line, at 2,630 feet, drilling; No. 6-A Floy Gray, 525 feet south line, 820 feet west line, at 2,683 feet, drilling; No. 8-A Floy Gray, James Hinds Survey, 150 feet south and west lines, at 2,195 feet, drilling in Taylor marl; No. 9-A Floy Gray, 450 feet west line, 150 feet north line, is rigging up; No. 6-C Floy Gray, James Hinds Survey, 150 feet south and west lines, at 2,655 feet, drilling; No. 7-C Floy Gray, 450 feet west line, 571 feet north line, at 2,671 feet, drilling; No. 8-C Floy Gray, 450 feet west line, 150 feet south line, is rigging up; No. 7 T. A. Tiller, James Hinds Survey, 150 feet south line, 450 feet east line, at 2,640 feet, drilling. Magnolia Petroleum Co.'s No. 1 Mattie Merriwether, A. Floyd Survey, 450 feet northwest lines, 100 feet northeast lines, at 2,490 feet, drilling. Nash, Windfohr & Perry's No. 4 Wilson, A. Floyd Survey, 200 feet west line, 350 feet north line, a location. The Texas Company's No. 8 Merriwether, at 2,786 feet, standing.

Darst Creek Field—Guadalupe

Gulf Production Co.'s No. 1 L. Anderson, Jacob C. Darst Survey, 150 feet south and east lines, location; No. 1 Tadlock, Jacob C. Darst Survey, 150 feet northwest corner, location. The Texas Company's No. 2 Dallas Wilson, Jacob C. Darst Survey, 150 feet south and west lines, is derrick; No. 2 L. Anderson, 150 feet out of northeast corner, at 685 feet, is shut down; No. 3 Lemmie Anderson, 150 feet north and west lines, location; No. 4 Lemmie Anderson is derrick.

Humble Oil & Refining Co.'s No. 4 Flato, Block 10, Section 40, 250 feet east line, 450 feet north line, at 6,577 feet, tested big flow hot salt water with little show of oil.

Cartwright Field—Live Oak

Houston Oil Co.'s No. 2-A Brown, M. B. Kilvin Survey, 1,200 feet northeast of No. 1, at 2,107 feet, set 8¼-inch casing.

Adams Field—Medina

Southern Gas Utilities Co.'s No. 22 M. M. Adams, F. Mumme No. 7 Survey, Block 23, located 2,308 feet west line, 644 feet south line, completed 2,000,000 feet of gas.

Agua-Dulce Field—Nueces

Agua-Dulce Oil & Gas Co.'s No. 1 Otto Wolters, Section 34, Bentons pasture, at 2,047 feet, standing. R. & G. Corp.'s No. 1 Brown, George H. Paul Subdivision, C SE NW, Section 87, location.

White Point Field—San Patricio

Spencer & Rhodes' No. 2 The Texas Company fee, Lot 6, Roos Subdivision, 150 feet south and west lines of west 50 acres, erecting derrick.

Nursery Field—Victoria

Humble Oil & Refining Co.'s No. 3-A Jay J. Welder, D.L.&C. Survey, 1,634 feet southeast lines, 736 feet southwest lines, at 4,269 feet, drilling.

PRODUCERS COMPLETED

Duval County

Humble Oil & Refining Co.'s No. 30 Kohler, Section 169, total depth 1,767 feet; 85 bbls.

Magnolia Petroleum Co.'s No. 6 Hahl, Survey 250, Block 24, total depth 2,321 feet; 100 bbls.

S. & O. Oil Co.'s No. 4 Bowe, Survey 250, Block 21. Total depth 2,306 feet; 75 bbls.

Guadalupe County

The Texas Company's No. 1 Dallas Wilson, Jacob C. Darst Survey; total depth 2,608 feet; initial production 1,200 bbls. Sustained first week 600 bbls.

Medina County

Southern Gas Utilities Co.'s No. 22 M. M. Adams, F. Mumme Survey; completed 2,000,000 feet gas.

ABANDONED TESTS

Duval County

Sun Oil Co.'s No. 2 Lopez, Survey 730; total depth 2,900 feet; plugged and abandoned.

Jim Hogg County

Alworth, Stevens, Hill Co.'s No. 14 M. Garza, Survey 39. Total depth 2,204 feet; abandoned.

Webb County

Carolina-Texas Oil Co.'s No. 8 Benavides. Survey 683, Block 12. Total depth 2,640 feet; abandoned.

NEW LOCATIONS

Caldwell County

Humble Oil & Refining Co.'s No. 7 Clyant Smith, James Hinds Survey, located 179 feet south lime, 150 feet east line. Location.

The Texas Company's No. 1 W. T. Cude-37-acres, located 1,250 feet southwest of Buchanan's No. 1 L. K. Brown. Drilling at 1,130 feet.

REMARKABLE STORY OF A RECORD BREAKING SHOT

(Continued from Page 64)

out of the hole, but not soon enough, and the pressure below the bit began bringing it and the stem out faster than the line, which was gyrating like a snake up towards the crown block. The tool dresser ran out to the engine to cut off the fires while all onlookers were doing a marathon over the prairies, to outdistance the rain of falling particles of limestone.

Hell Was a'Poppin'

The tools were shot up through the water table, knocking aside the crown block, and wrecking everything in which they came in contact, causing a general repairing of the derrick at the present time. The line was wrapped up in the top of the rig and had to be chopped to pieces and pulled down from its resting place. The headache post, part of the line, and screw can be seen in the accompanying pictures, lying on the derrick floor, literally covered with mud and lime particles. The stem can be seen in the at that point by the stratum of limestone underlying the top soil. The bailer, seen hanging in the center of the picture, was apparently never moved by the blast. In another accompanying picture the stem of the tools can be seen rearing itself above

Al. E. Rapp, president of the United States Torpedo Co.

right hand side of the picture. After it had reached the zenith of its flight above the water table and crown block, it fell back down through the derrick, going through the top of the house, crashing through the derrick floor and 10 feet into the earth, finally being checked the crown block as it reached the top of its trajectory, before starting its plunge back down through the derrick.

Mud and slush were emitted over the top of the derrick for about four minutes, covering the surrounding area with small particles of gray lime and mud, and after this maelstrom of debris had subsided about 200,000 feet of gas continued to roll over the top of the hole, gradually decreasing to about 50,000 feet. And so ended the shooting of presumably the largest oil well nitroglycerin shot in the world.

Al. E. Rapp, president of the United States Torpedo Company, with headquarters at Electra, Tex., who has been shooting wells for over 22 years, says that this shot was 1,010 quarts larger than the largest he had ever put off in a well, and believed it to be the largest in the state of Texas, if not in the world.

19 Hours to Pour Shot

Nineteen hours of continuous pouring, filling 27 shells and dumping 40 more, worked five shooters and helpers until they were sick and dizzy from the fumes of the nitroglycerin carried to the well by seven of the torpedo company's trucks.

Total amount of the lime shot was 140 feet, from 3,180-3,328 feet. The oil show encountered in this lime, which was topped at 3,180, was believed to warrant such a shot, and it was thought by the owners of the well that 2,000 quarts would disintegrate the firmly compacted formation about 1,000 feet in each direction, thereby giving the oil a chance to come in after the lime had been broken. Five hundred quarts in a previous shot from the same depths in the lime had yielded nothing, and it was pretty surely felt that the second shot would bring some returns, but so far the well apparently has not been benefited, although there is apparently 1,000 feet of fluid standing in the hole. Whether it is oil or water will be told later when the rig is repaired, and the tools run into the hole to clean it out and a test made.

The well is located in the E half of the SW quarter of Section 42, Block 4, T&P

Al. E. Rapp setting Zero Hour bomb which shot off well at 9:36 a.m., August 25, 1929.

Survey, Stephens County, approximately 2 miles southeast of the town of Caddo, and 1,350 feet southeast of the T. G. Shaw No. 1 Manning which is producing about 75 bbls. daily.

Ed W. Bateman, owner of the test, owns the lease on the 80 acres under the well, and also the west offset 80 acres, the land belonging in fee to the Manning Estate, Inc. Mr. Bateman has offices in the Petroleum Bldg. at Fort Worth, Tex.

Picture showing condition of derrick floor after the tools were lowered and bridge knocked out after the shot. "Headache post," screw, pieces of line and debris cover the floor, with the drilling stem shown at the right where it had imbedded itself in 10 feet of the surface after plunging down through deck.

CAUSES OF SUCKER ROD TROUBLE SOUGHT

(Continued from Page 39)

top of the stroke, considerable plunger movement is lost due to stretch in the rods and is not recovered before the rods start their downward travel. On this basis a more efficient pumping motion should be obtained by a longer stroke and slower pumping speed, hence, this would depend to some extent on the pumping depth of the well, as in the deeper wells the impact and accelerated loads would occur later in the pumping stroke.

Figure 4 shows a card of a well pumping on a long stroke and handling considerable fluid. This well has a very efficient pumping motion and has given no rod trouble.

Figure 5 shows a comparison between a 2½-inch standard working barrel and a 2½-inch insert pump. Very little rod trouble has been experienced at this well since installation of the insert pump, in comparison with previous rod failures. As the cross-sectional area of the insert pump plunger is approximately 74 per cent of that of the standard barrel, a lighter running pump is to be expected. The reduction in down time, due to an easier running pump, may offset any disadvantage of the smaller capacity. Similar conditions have been obtained by changing from 2½-inch to 2-inch tubing and working barrel.

Counterbalancing

Counterbalancing is usually considered merely from the standpoint of power saving, but experiments conducted on several pumping wells disclosed the fact that changes in counterbalance weight will not only reduce the load on prime movers but will also smooth out the rod motion, reduce impact loads, and affect the plunger movement.

If a pumping well can be considered as a machine, the well can be balanced, not considering certain factors such as friction, acceleration, gas and others, as follows:

Up stroke of the rods = Bw + Wp = Fw + Rw; Wp = Fw + Rw — Bw.

Down stroke of the rods = Bw — Wp = Rw — Wb; Wp = Bw — Wb + Rw.

In a balanced machine Wp will be equal on the up stroke and the down stroke and

$$Bw = Rw + Fw - Wb \quad \text{(Formula 2)}$$

$$2$$

Where Bw = Weight of counterbalance.
Wp = Maximum force at crank end of beam.
Fw = Fluid load supported by valves.
Rw = Weight of rods.
Wb = Buoyant effect of fluid on rods.

Then the most efficient counterbalance for power consumption is equal to the weight of the rods plus one-half of the fluid load less one-half the weight of the fluid displaced by the rods. By weighing a well, the correct counterbalance can be accurately determined as all factors affecting the rod loading are taken into consideration.

Theoretically Correct Weight

From an indicator card the theoretically correct counterbalance weight is equal to the load on the down stroke of the card plus one-half the difference between the load on the up stroke and down stroke, or, in other words, is equal to the load corresponding to the mean height of the card and conforms to the formula above, with all factors affecting the rod loading taken into consideration. For example, to stress the importance of counterbalancing, consider the stresses involved and the horsepower necessary to operate a balanced and an unbalanced machine. Assume a well with an average load of 7,000 pounds on the up stroke of the rods and an average load of 4,000 pounds on the down stroke. The theoretically correct counterbalance is then 5,500 pounds. From formula (2) Wp = 7,000 — 5,500 = 1,500 pounds on the up stroke.

Wp = 5,500 — 4,000 = 1,500 pounds on the down stroke, and thus is obtained a constant belt or gear tension equivalent to 1,500 pounds force at the crank end of the beam on both the up and down strokes.

Let the well be underbalanced 1,000 pounds and on the up stroke and down stroke forces of 2,500 pounds and 500 pounds, respectively, are necessary. Remove the balance altogether and a force of 7,000 pounds on the up stroke is necessary and the rods are driving the crank with a force of 4,000 pounds on the down stroke. The stresses that would be put on the belt, engine and rig, are apparent. If no counterbalance is provided, the prime mover must be adequate to provide the maximum lift of 7,000 pounds but when correctly balanced with 5,500 pounds, a prime mover need only supply 1,500 pounds net force.

Polished Rod Load

The polished rod load will not be affected as readily as the power end by changes in counterbalance. Changes of less than 400 pounds effective counterbalance weight usually produce little change in an indicator card, but changes over 400 pounds may affect the rod load considerably. With electric power, the effects of counterbalancing at the power end can be determined by the use of electric recording instruments. With other types of prime movers the dynamometer is the only practical method available. The most efficient counterbalancing, as determined at the power end, does not always produce the best pumping motion and a medium derived from studies at both ends will produce the best results.

Figure 6 shows cards taken on a well with a reduction gear unit and rotary counterbalance. The theoretical correct counterbalance, as determined by the dynamometer, is 5,700 pounds. Card A, taken with the amount of balance closest to the correct amount and directly with the crank, produces a lower power consumption and a smoother pump motion. Card D, taken with 300 pounds less weight but in the same position, has a slightly higher power and polished rod load with the shape of the card about the same. Card B and Card C were taken with the same amount of balance as Card A, but leading and lagging the crank by 15 degrees, respectively. By leading the crank an impact load occurs at beginning of the up stroke, when by lagging the crank a slight impact load occurs early in the up stroke and again late in the stroke. Both positions of the counterbalance when set off center resulted in a very uneven power load at the motor.

Figure 7 shows two cards, one taken on a well that was overbalanced and the second taken when the counterbalance weight was reduced to the correct amount. Very little change was made in the horsepower load at the motor or the polished rod, but a much smoother rod motion is obtained when the counterbalance weight approaches the correct amount.

No Comparative Tests Made

No comparative tests were made between rotary and beam type counterbalances on the same well. While the author's information on this comparison is incomplete, present studies of all wells weighed indicate that the rotary balance produces a smoother pumping motion. The grasshopper counterbalance apparently produces sharper peak loads than the rotary type.

On long strokes and fast pumping speeds the beam balance has particular disadvantages due to the high speed reciprocation of the balance weight, producing certain undesirable inertia effects. To reduce this effect, extremely heavy weights are hung between the pitman and the samson post.

One of the disadvantages of the rotary type balance is that the effective balance decreases as the length of stroke increases and in some instances it is impossible to install sufficient balance for the most efficient operation of heavy wells.

Probably a combination of the rotary and beam type balance would produce the best results.

By measuring the electrical input to the motor with a watt-hour meter and the power delivered to the rods with a dynamometer, the over-all above-ground power efficiency was determined. This efficiency varies from 12 to 85 per cent, depending on the type of drive, the counterbalancing and the load handled. The decrease in power is not in proportion to the decrease in load at the polished rod and higher power efficiencies are obtained at increased pumping speeds, heavier loads and more efficient counterbalancing.

Acknowledgments

The writers are greatly indebted to W. W. Scott, chief petroleum engineer, and C. V. Temple, petroleum engineer, West Texas division, Humble Oil & Refining Co., for suggestions offered and data furnished, also to several field men and engineers who have collaborated in the making of tests and accumulation of data that made possible the preparation of this paper.

LIVES TO CELEBRATE IMPORTANT ANNIVERSARY

Samuel B. Smith, who assisted in drilling the Drake well, celebrated the seventieth anniversary of the event by work-

ing 10 hours a day on the acre garden surrounding his home in Titusville, Pa. Two miles from his home is the scene of his achievement. Mr. Smith is 86 years of age.

DRILLING CONGRESS IN PARIS

The second International Drilling Congress will meet in Paris September 16-23. As organized in 1925 in Rumania under the presidency of Dr. L. Mrazec, the principal objects of the congress are the advancement of methods of drilling for different purposes, the improvement of machinery and equipment for drilling, and, in particular, the conservation by proper agencies of the scientific results of drilling. In addition to exhibits of equipment relating to all aspects of drilling, it is likely that the congress will be the center of meetings of manufacturers as well as engineers, geologists and others.

WILL USE ELECTRIC POWER

HOUSTON, Tex., Aug. 31.—Gulf Production Co. has contracted with the Gulf States Utilities Co. for electric power to be used in operations in the new field opened several months ago by The Texas Company in southwest Orange County near Port Neches. The Utilities company has started stringing a high voltage line to the new field from Orange. Gulf Production Co., which will operate two rigs in the new fields, will use electric power for drilling. Plank roads are being laid to the new locations and material is being placed on the site. The new field is in the marshes of the southwestern part of Orange County.

TWO WELLS FOR PENN MEX

PITTSBURGH, Pa., Sept. 2.—In the Sanisidro sector, Mexico, the Penn Mex Fuel Co., Pittsburgh, has completed No. 17. It is producing 1,000 bbls. a day. On the Pasoreal tract, the same company has completed No. 35. It is producing 2,500 bbls. a day.

Practical Suggestions in Refining

By W. T. Ziegenhain

Stress Viscosity-Temperature Curve In Lub Manufacture

Refiners are given a wider range of crudes to pick from in choosing the base stock for the manufacture of lubricating oils and cylinder stocks by the adoption of vacuum distillation and several new factors of quality have been introduced and will be stressed in the near future. More attention is now being paid to improving the quality of the lubricating oils and bright stocks than to any other product and such factors as the temperature-viscosity curve, the pourpoint and flashpoint of these oils will receive a great deal of attention in the future.

Those light colored crudes which have commanded a premium in price seem to be losing out to certain dark colored crudes now since overhead cylinder stocks appear as a certainty. These darker crudes, in turn, possess characteristics that make their processing less expensive in producing products of superior quality. As examples, some refiners have standardized on the running of certain West Texas and Panhandle crudes in preference to lighter and so-called "sweet" oils from other Mid-Continent fields. The coloring matter is left behind as a residue so the matter of color in subsequent processing is disposed of. Attention then may be turned to other factors. The most important now seems to be the temperature-viscosity curve, the pourpoint and the flash.

Many samples of crude are being tested in the refinery laboratories in order to find those producing lubricating oils and bright stocks showing the least viscosity change over a given temperature range. Hendricks County, West Texas, and Pecos County of the Panhandle district produce oils of superior qualities in this respect, whereas, not long ago, they were considered poor crudes to run for lubricating oils.

With the problem of color eliminated, a broader field of wax-free crudes is also opened. Overhead cuts from asphaltic and mixed base crudes have low pourpoints naturally and more rigorous chemical treatment has permitted the removal of the unsaturated and sulphurous bodies inherent in these oils formerly. Along with the low cold test and light color certain of these oils show a very favorable viscosity-temperature relation. This is further improved in some cases by treating the base stock with aluminum chloride to remove the unstable hydrocarbons, leaving a higher percentage of saturated hydrocarbons in the oil, these being known to hold a more constant viscosity over a given temperature range.

WASHING OVERALLS PART OF ROUTINE AT PLANT

Washing overalls, towels, etc., is a part of one man's duty at the Okmulgee plant of the Independent Oil & Gas Co. Besides being a step in economy it removes every excuse for a man coming to work in dirty overalls. The company believes that even refinery workers can look clean and that besides this leaving a favorable impression of the company on the part of visitors at the plant, helps to remove the idea of drudgery in work for the men.

The company has purchased an ordinary electrically operated washing machine which will handle about three pairs of overalls an hour. Placed on a routine operating basis, this one machine will handle all of the washing for about 100 men. Towels also, are laundered at the plant and at quite a saving.

AUTOMATIC ELECTRIC SWITCH MADE AT LOW COST AND HAS MANY USES

Utilizing the fact a steel spring lengthens when heated and is shortened when cooled, a novel automatic electric switch may be made from materials readily available at the refinery and at a low cost. The switch will find application in the refinery control and in the laboratory where any electrical device is to be started or stopped automatically with a change in temperature in some part of the equipment.

Briefly stated, electric contact is made by tilting a partly filled bottle of mercury allowing the mercury to roll down and fill the space between two contact points to complete the circuit. This bottle is tilted by the rotary movement of the steel spring as the metal is heated and cools. Obviously, the fineness of control is dependent upon the length of the spring, the coefficient of expansion of the metal and the precision used in assembling the moving parts.

Below is shown a sketch of a side view and the face of the instrument. The frame is simply a piece of iron pipe conduit, one end of which is threaded and fastened into an ordinary outlet box. The other end of the pipe is cut so as to leave a short arm projecting out, to which one end of the spring is welded or bolted. The box and pipe are held together by means of two thin locknuts tightened against each other on opposite sides of the back panel of the box.

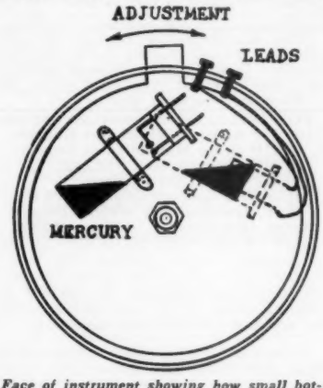
A steel or brass rod of any convenient diameter, as one-eighth to one-fourth inch, runs through the center of the pipe. One end of this rod is fastened to the loose end of the spring and the other end is threaded to take a small nut that is first put on, leaving about 1 inch of the threaded rod exposed. A disc is then slipped on the rod and soldered or welded to the nut and rod. The face of the instrument is then slipped on to the rod and a nut holds the assembly together.

The face of the instrument is thus held against the disc to form a friction contact and the tension may be varied by tightening or loosening the end nut. A short projection of the face permits one to vary its position and adjustment as described later.

How Contact Is Made

A small glass bottle is mounted on the face. As the face tends to rotate first in one direction and then in the opposite direction, the little bottle is tilted. A few drops of mercury are sealed in the bottle and as the bottle is tilted this mercury rolls from one end to the other.

Sealed into the glass bottle or held in position by means of a rubber stopper, are two contact points. These points may be simply projecting ends of two copper wires. The ends of the wires should be rounded off and made as smooth as possible to minimize the chance



Face of instrument showing how small bottle is mounted and positions taken as the rod rotates.

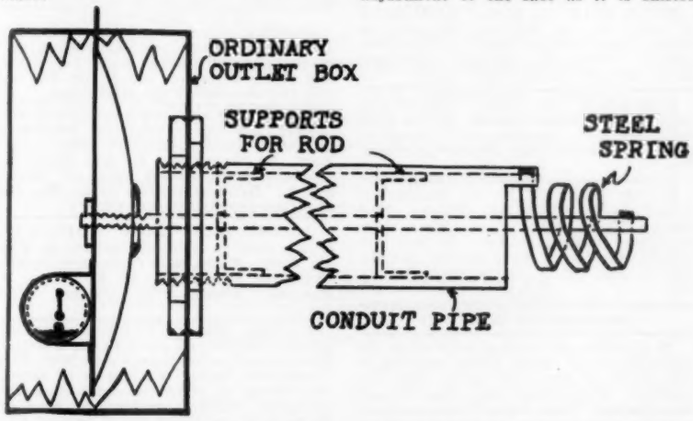
of any of the mercury adhering to them. The length of the gap between the wires is optional but in a small installation, one-fourth inch is practical. The simplest and quickest manner of securing the wires is to thread them through a new rubber stopper. The stopper should fit into the bottle securely and it is preferable to give it a coating of shellac to more tightly hold it in place. The lead wires from these contact points should be made of stranded wire well insulated and flexible so as not to interfere with the constantly changing position of the bottle. These lead wires may be brought to binding posts within the box. A small hole may be drilled through the box and insulated with a piece of rubber hose and the wires leading from the instrument to the motor or other device to be operated may be thus fastened inside.

May Vary Design

If desired, the glass bottle and the face of the instrument may be covered with a blank box plate. Similarly, the spring may be enclosed in a shield made from noncorrosive metals if the instrument is to be exposed to acid fumes, etc.

The spring must be heavy enough to exert a positive force on the rod. The spring must be rigid enough to withstand adjustment of the face as it is shifted from one position to another. In adjusting the face, the bottle may be made to tilt with a slight rotation of the face or made to pass through an arc of nearly 180 degrees before the mercury rolls to the end, making contact. A long spring will of course cause the face to rotate further than a short spring, and the degree of rotation is in proportion to the length of the spring. Ordinary steel spring material will elongate and contract sufficiently in 5 turns three-fourths inch in diameter to operate the instrument for a difference of 10 degrees of control. If a finer control is needed, a longer spring may be used. It will probably be necessary to experiment some, in order to get the desired length of spring. It is an easy matter to stop the rotary motion of the face by cutting a slit in the box and threading the narrow projection of the face through this slit. Then the face may rotate in one direction until the projection hits the end of the slit and then any further rotation will cause a slippage between the face and the disc.

In cases where instruments have been perfected and on the market at reasonable prices, it would probably be cheaper to purchase such an instrument. However, the instrument described here is finding practical application in control work and the same principles and ideas described here may be modified and application found in some other manner.



Side view of instrument showing position of spring which accentuates rotary movement of the rod causing the mercury in the bottle to make and break contact between the wires in the bottle.

Recent Patents

1,722,147. Art of Cracking Hydrocarbon Oils. Edward W. Isom, Scarsdale, N. Y., assignor to Sinclair Refining Co., New York, N. Y., a corporation of Maine. Filed May 21, 1927. Serial No. 193,191. 3 Claims. (Cl. 196—48.)

1. An improved process for cracking hydrocarbon oils comprising passing a stream of oil once through a heating conduit and heating it to a cracking temperature therein, discharging the hot products from the heating conduit directly into a body of oil maintained in a reservoir at a cracking temperature, taking off vapors from the reservoir and subjecting them successively to a first and second refluxing operation, passing fresh relatively refractory oil in indirect heat exchanging relation with the vapors in the first refluxing operation and thereby cooling and refluxing the vapors and preheating the fresh oil, supplying fresh oil so preheated to the body of oil in the reservoir, passing fresh relatively more refractory oil in indirect heat exchanging relation with the vapors in the second refluxing operation thereby cooling and refluxing the vapors and preheating this fresh oil, and forcing reflux condensate from both refluxing operations together with fresh oil preheated in the second refluxing operation through said heating conduit.

RECOMBINE VAPOR AND CONDENSATE—HIGHER PRESSURES

1,724,476. Pyrogenetic Cracking Process. Richard W. Hanna, Piedmont, Calif., assignor to Standard Oil Co. of California, San Francisco, Calif., a corporation of Delaware. Filed October 15, 1927. Serial No. 226,306. 5 Claims. (Cl. 196-58.)

1. A process of cracking mineral oils which comprises heating the oil under pressure to a temperature sufficient to form vapors from such oil, then separating the oil into vapors and liquid, separately raising the pressure on said vapors and liquid and recombining the same whereby the oil is materially raised in temperature by the heat of the compression of the vapor and brought to a pyrogenetic decomposition temperature, and passing the oils into a reaction zone.

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OVER 2,500 ACRES under lease. We drill and repay investment out of pipe line runs; investor still retaining his original interest. Production to substantiate our proposition. H. H. Francis, 714½ Francis St., Saint Joseph, Missouri.

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FOR SALE—By owner. Shallow production in Callahan County, Texas; wells fully equipped, pumping with electrical power. Address 2001 Aveaue D, Cisco, Tex.

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Please write to F. J. First, Casey, Illinois, for important information.

HELP WANTED

DRAFTSMAN capable of handling design as well as detail work. Familiar with refinery and general oil field drafting. Experience and sample of work to accompany application. Chief Engineer, Empire Companies, Bartlesville, Okla.

COMPETENT refrigeration engineer by Mid-Continent refinery. State age, experience, extent of education, etc., in letter to Box D-94, The Oil and Gas Journal, Tulsa, Okla.

WANTED PUMP SALES ENGINEER. State salary expected to start, age, married or single, and detailed statement of experience together with names of employers. Address Box D-100, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED—EXPERIENCED PUMP SALES ENGINEER with knowledge of refinery and pipe line applications. Young married man already acquainted with trade in Oklahoma and Texas. Must have engineering education, good sales record and free to travel territory. In applying give full details, salary, when available, and photo, if convenient. Write Box No. D-101, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED. SUPERINTENDENT for gas system. New company desires man to take charge of gas distribution system in North Texas. System will cover ten or twelve towns and about 200 miles of pipe line now under construction. State reference, experience, age, and salary expected. Address 607 Holmes Building, Fort Worth, Texas.

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Need services experienced subdivision promoter. Property ideally located on National Highway adjoining thriving town which promises to become distributing center for oil field now under development. Liberal proposition. References required. Address Charles Luis, c/o Hotel Lockie, El Paso, Texas.

POSITION WANTED

GRADUATE GEOLOGIST, age 24, unmarried, desires position. Prefer subsurface department. Willing to accept small salary to start. Best references. Available at once. Write Box D-70, The Oil and Gas Journal, Tulsa, Okla.

SINGLE MAN desires position where knowledge of oil geology would be advantageous to employer. Inquire Box D-92, The Oil and Gas Journal, Tulsa, Okla.

ENGINEER, 33, WITH 10 YEARS OIL EXPERIENCE ABROAD, 4 years as chief engineer, thoroughly familiar with oilfield engineering, desires progressive post. Write Box No. D-102, The Oil and Gas Journal, Tulsa, Oklahoma.

CIVIL ENGINEER, age 24, single, six years experience in land surveying, pipe line location, and construction work desires position as party chief or instrument man. Excellent references. J. T. Riley, Jr., 403 West Nash Avenue, Terrell, Tex.

CIVIL ENGINEER

Familiar with production and pipe line engineering, fifteen years experience, permanent position wanted where experience and ability is needed. Box D-108, The Oil and Gas Journal, Tulsa, Oklahoma.

EIGHT YEARS' experience as a stationary gas engine operator, repairman or trouble shooter. Foxboro meter repair man. In charge gas air lift plant the past two years for one company. Desire change. References. Box D-98, The Oil and Gas Journal, Tulsa, Okla.

ACCOUNTANT NOW EMPLOYED wishes position with oil company in Middle West. Many years experience in Mid-Continent oil offices. H. P. Dillon, 70 Prospect Street, Port Chester, New Jersey.

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POSITION WANTED

NATURAL GAS ENGINEER and executive with practical experience in main line and distribution system construction, together experience in gas sales and purchases and having a genuine knowledge of executive work would, consider a change. Address Box D-110, The Oil and Gas Journal, Tulsa, Okla.

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NOTICE. I have eight hundred acres located in Elk Co. Kansas, Sec. 19-20-30, Twp. 13, close to production, never been drilled, that I wish to lease to someone who will start drilling at once. It will pay you to investigate this, as this was never advertised before. Wire or write L. M. Benefiel, Paola, Kansas.

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IF INTERESTED in Michigan oil fields, leases or production, write Michigan Oil and Mining News, 115 Ionia Street, Grand Rapids, Michigan.

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KANSAS VERY ACTIVE 10-acre leases. Active districts, $25.00 cash with order. W. S. Covert, 2680 Dahlia Street, Denver, Colorado.

FOR CHEAP West Texas oil lands, see Joe Cunningham, Big Spring, Texas.

WE PAY CASH for Lea County oil leases. FOR SALE: Lea County perpetual deeded oil royalty under major company leases. Southeast New Mexico oil leases, $25 for 40 acres. Low rentals. Easy payments. Chance for huge profits. Write Monarch Investment Co., Roswell, N. Mex.

LEASES—PRODUCTION

LAND, Leases, Royalties and Drilling Blocks in proven or unproven territories, Winkler, Pecos, Ward, Loving, Reeves, Culberson and adjoining counties. Wire or write.

H. F. Anthony, Anthony Bldg., Pecos, Texas.

4,000 acres in leases given free for the drilling of one well 2,000 feet; old shallow gas territory; good market. Linn County. H. W. Mitchell, Parker, Kansas.

GRAY CO., TEXAS, lease in proven territory, SE 20 acres of N½ of Sec. 1, B.&B. Apply to E. Key, Marshall, Tex.

LEASES and royalties, Caddo, Blaine and adjoining counties. Write for complete list. A. E. Baldwin, Anadarko, Okla.

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ROYALTIES—PRODUCTION

SEDGWICK, Harvey County, Kansas. Royalties on core drilled blocks, offsetting drilling wells and locations, also Ness County leases and royalties. James R. Haynes, Grantville, Kansas.

YATES POOL ROYALTY

WILL sell 1 acre or more Sections 10 and 19, Blk. 194, Pecos County at $250.00 per acre. Glen Myers, San Angelo, Texas.

ACTIVE WEST TEXAS ROYALTIES $8 square mile. Big company operation. See maps and bulletins. R. R. Fisk, Box 1214-B, Wichita Falls, Texas.

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If interested, address Atlas Royalty Co., Box 762, San Angelo, Tex.

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James H. Dugan,
El Dorado, Ark.

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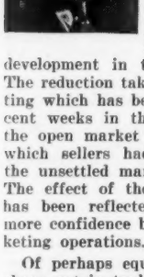
Classified Wants Section

East Coast Gasoline Market Weakens

Standard of New Jersey's Reduction of 1 Cent a Gallon at Refinery Terminals Is Outstanding Devolpment in Situation

By A. E. Mockler
New York Bureau, The Oil and Gas Journal



NEW YORK, Sept. 2.—The gasoline market has developed weakness throughout the East Coast area this week, with both wholesale and retail prices lower. A reduction of 1 cent per gallon to 9 cents for U. S. Motor gasoline at East Coast refinery terminals, inaugurated by Standard Oil Co. of New Jersey on August 29, was the outstanding development in the refinery situation. The reduction takes into account the cutting which has been prevalent during recent weeks in the East and establishes the open market at the lowest price at which sellers had been booking during the unsettled market of the last month. The effect of the sweeping cut already has been reflected by an exhibition of more confidence by jobbers in their marketing operations.

Of perhaps equal importance was the sharp cut in tank wagon and filling station prices announced by Standard Oil Co. of New York, which announced reductions of from 1 to 3 cents per gallon in metropolitan and adjacent territory.

Of lesser significance, but close to a major development nevertheless, was the strengthening in the position of kerosene at refineries, as indicated by a firming-up of a quarter cent per gallon to 8 cents in the quotation of the leading seller, on water white.

Cylinder oils have weakened again, with paraffin wax prices moving upward on all grades. Price changes on other refined products were lacking.

Export market interest is centering on the possibility of a drop in the Gulf basis prices on gasoline and kerosene, following persistent reports of offerings from independents in the field at prices a quarter to a half cent under the schedule maintained by leading refiners for shipment from the Gulf. Export buying continues sluggish.

Tank Car Gasoline

Standard Oil Co. of New Jersey took the lead in a downward revision in U. S. Motor at Eastern refineries, reducing the posted price a full cent to 9 cents per gallon at principal refinery terminals, effective August 29. This action on the part of the dominant seller served to clarify the situation considerably, and the trade is looking for the maintenance of a more stable market as the fall season gets under way.

The reduction caught many interests by surprise, it apparently having been thought that the 10 cents quotation would be maintained until after the Labor Day holiday. The latter quotation, however, has meant little for several weeks past, the bulk of the business having been going through at 9½ cents per gallon and under. The full cent cut, too, was a surprise to many, who had believed that the drop would be but 9½ cents, establishing the market at the level at which most of the trading was being done.

Standard's action, and the action of other interests in getting down to the 9 cents basis, eliminates much of the uncertainty which has been characteristic of the Eastern gasoline market for a month or more back. The new price, it is felt, thoroughly readjusts the refinery market here in line with that prevailing in other sections of the country, and brings out into the open a fair price based on the present market situation. In many cases, markets have been semidemoralized during recent weeks by the numerous rumors which have been circulated by this seller or that one going down to 9¼ or 9 cents per gallon. The 1-cent cut meets the extreme low figures which had been rumored in tank wagon markets.

Jobbers have come into the market in a larger way since the price cut, which has gone far toward re-establishing their confidence in the refinery position here. The cut came at an opportune time for jobbers, enabling them to order forward gasoline in large quantities to take care of their week-end holiday trade. Had not the reduction materialized, it is believed, distributors would have held down to their day-to-day buying operations, with considerable chaos in rushing last-minute deliveries for holiday requirements.

The 9 cents quotation, in addition, is an answer to the "menace" of added competition by Gulf Coast and California gasolines in the East Coast jobbing market, and tends to re-establish the position of the local product in home markets.

Tank Wagon Gasoline

In answer to recent price cutting by various factors in the metropolitan area, Standard Oil Co. of New York, as of August 30, reduced its tank wagon and service station prices 3 cents per gallon in Manhattan, the Bronx, Kings County and Queens County, to 14 cents per gallon tank wagon and 16 cents filling station, both exclusive of the 2-cent state tax. The same company reduced its prices 1 cent per gallon on Staten Island, Long Island, Westchester and that part of the state lying north of Westchester falling within what the company terms its Yonkers tank wagon circuit. Prices in other sections of the New York company's territory remain unchanged.

Other factors in New York are meeting Socony's reduction, and it is felt here that the price cutting in tank wagon markets will probably spread to other parts of the East, in view of the lower refinery basis on gasoline. While there has been a good deal of price shading "to meet competition" in various sections of the East this summer, the open market has been relatively free of price revisions, up to this week's cuts markets having been more than usually stable this summer.

With many lines of business closed down from Friday night, August 30, to September 3, giving millions of workers a triple holiday over the week-end, tank wagon delivery departments have been rushed in keeping the filling stations supplied with sufficient gasoline to take care of their holiday trade. Reports from leading marketers here indicate that all records for consumption have gone by the board during the past few days. In general, tank wagon sales in this area have been running between 10 and 15 per cent ahead of comparable 1928 totals during the greater part of the summer season.

Premium gasolines are in steadily growing demand throughout the East, and refiners and marketers look for notable gains in consumption of their higher quality motor fuels during the coming winter season. As a result of the remarkable development of distribution of these premium fuels, downward readjustments in U. S. Motor gasoline at refineries are having less effect upon refiners' and marketers' earnings than was the case in former years, the premium gasoline market having proved its ability to stand up at listed prices in the face of price cutting on the ordinary motor fuels.

Kerosene

Further strength has developed in the kerosene situation this week, and the price trend appears upward. The leading seller, who has been booking at 7¾ cents during recent weeks, although nominally quoting 8 cents per gallon in the open market, is again firm at the latter figure, and other sellers are showing a tendency to get their prices up to that level. A few weeks ago, with the bulk of the business going through at 7¾ cents, some sellers were offering at 7½ cents. Now the 7½-cent sellers are in most instances up to 7¾ cents, with a strong possibility that the entire market will firm up to the 8-cent basis before very long.

Jobbing demand for kerosene has showed an upward swing during the past week, and tank car movement from the refineries was larger than for several weeks past. Continued expansion in this direction is looked for as the fall season develops further. Kerosene stocks at East Coast refineries are by no means burdensome, and refiners are showing firm views on the market for later-season delivery.

Refiners here are making plans for handling a much larger business in kerosene distillate for home heating purposes this winter, with the probability that California stocks will be drawn on in a fairly broad way to take care of the demand for this product.

The tank wagon kerosene situation is without change this week, insofar as prices are concerned. Demand has been showing material improvement, and the outlook for fall business is excellent. Refiners plan to materially widen their distribution of this product through their company-owned gasoline filling stations during the coming winter, with the probability that kerosene stocks for sale at retail will be carried at nearly all such stations.

Lubs

Demand for cylinder stocks has fallen far short of sellers' expectations this week, and the jobbing market here is again lower, in sympathy with reduced prices quoted on oils for refinery shipment. Spot 600 steam refined is offered at 29½ cents per gallon, in barrels, a drop of a full cent per gallon for the week, and 635 and 650 steam refined are showing similar declines at 32½ cents and 36½ cents per gallon, respectively. The market for 600 Pennsylvania flash is off half a cent at 42½ cents per gallon, with 630 flash showing a corresponding drop to 46½ cents per gallon. Prices on 600 Oil City "E" and Warren "E" are unchanged at 39 and 40 cents per gallon, respectively, and bright stocks are also steady and unchanged. Offerings of bright stocks for immediate delivery are not large, and the same is true of nearby positions, with refiners exhibiting strong price views in both instances.

Industrial demand for red and pale oils is reported as satisfactory, and the market remains in fairly steady position on all grades.

Paraffin Wax

The market has taken a further turn for the better, and the situation is improved with respect to demand as well as prices. Domestic buying is on the increase and the export market has been helped by a picking-up in the demand for fully refined grades for shipment abroad.

Sellers are quoting 120-122 a.m.p. an eighth cent higher at 3⅞ cents per pound, with other grades showing corresponding increases at 4¼ cents per pound for 125-127 a.m.p., 5⅜ cents for 130-132 a.m.p., 6 cents for 133-135 a.m.p. and 6⅛ cents for 135-137 a.m.p. Offerings of the latter grade have been smaller this week.

While the refinery situation on paraffin wax is still unsatisfactory from the standpoint of stocks on hand, refiners are making an effort to cut production and there has been a noticeable falling off in selling pressure on both crude scale and fully refined, distressed stocks having been taken from the market in recent buying.

Fuel Oil

Bunker "C" remains in firm position at $1.05 per barrel at refinery terminals, and business this week has been "quite satisfactory," to quote local sellers. Marine consumption is holding up exceptionally well and in addition the refiners are likewise experiencing an improved industrial demand.

Talk of a probable price advance has been relegated to the background by the continued gain in crude production, but well-posted interests here are still apparently convinced that a higher market on bunker "C" by the end of the year is in sight, and are predicting a $1.15 or $1.25 per barrel market.

Diesel Oil

Business is showing continued expansion in the marine field, with refiners holding the market firm on the basis of $2 per barrel, in bulk, at refinery terminals. Contract withdrawals are holding up well, and in addition there is quite a good deal of spot buying going on from day to day in the open market.

Low grade Diesel oil is firming up with the season for furnace oil demand looming in the offing, and operators state that it is impossible to buy Diesel at the Gulf for shipment to New York under 4½ cents per gallon laid down here.

Gas Oil

A better feeling has developed in the market, and consumption is on the increase. Leading sellers are still quoting 32-36 at 5¼ cents per gallon on recycled stock, and while this price is still being shaded by a quarter to a half cent per gallon, offerings at the inside figure are not so numerous.

The artificial gas companies are increasing their withdrawals of gas oil on standing contracts, and refiners look for continued increase in consumption in this quarter. Labor Day normally marks the turn in gas consumption in Greater New York.

Export Markets

Open-market trading in bulk gasoline for export continues practically at a standstill. The French subsidiary of one large company was reported in the market for a cargo of between 8,000 and 9,000 tons for early shipment, but it was expected that the parent company would handle this business. There have been a number of clean ships fixed for September to the United Kingdom and Continent, leading to the belief that buyers in these countries would be in the market for four or five gasoline cargoes early in the month. Thus far, however, the inquiries have not come through.

Considerable interest surrounds the price situation at the Gulf. Independent operators contend that they can shade the Association price schedule by a quarter to a half cent per gallon by buying from independent refiners in the field. Thus far, the Association has not announced any price revision.

A fair business in small lots of cased gasoline has continued, and the same is true of kerosene, prices holding firm on both. Most of this buying has been for shipment to South America, Africa and the Far East.

Lubricating oils have continued rather sluggish in export channels this week, with the price basis slightly easier on a number of grades of cylinder stocks. Red and pale oils, however, have remained steady.

Export buying of fully refined grades of paraffin wax has picked up, and the market is fractionally higher on several

grades, reflecting this increase in trading.

There have been few developments of interest in the export situation with respect to other refined petroleum products during the current week.

Petroleum Exports

The following table shows principal exports of refined petroleum products from New York during the past three weeks (all figures in gallons unless otherwise noted):

	Week Ended		
	Aug. 24	Aug. 17	Aug. 10
Gasoline	665,000	225,100	98,000
Naphtha	1,226,300	1,806,400	295,000
Kerosene	21,000	584,200	47,000
Fuel Oil	30,000	.....	11,000
Lubricating Oil.	961,000	1,548,900	987,800
Petroleum, refined	1,364,300	395,300	780,000
	Pounds		
Petrolatum	92,100	.....	8,000
Paraffin wax	1,271,900	1,718,900	787,400
Refined	50,000	93,000	25,000
Scale	286,300	71,400	264,500
Lubricating grease	1,003,400	1,525,600	563,200

Sales of refined products for export are still running behind refiners' and operators' anticipations, and the market is apparently waiting on further developments at the Gulf. Export buyers have apparently been anticipating a reduction in the formal list prices at the Gulf, and it is evident that a good deal of buying is being deferred pending some definite development in the situation in the Southwest. This quiet is affecting the local market, where buying in most instances has been limited to small quantities for prompt or nearby shipment for the past several weeks.

Imports

Imports of crude and refined oils at the principal United States ports for the week ended August 24 totaled 1,301,000 bbls., a daily average of 185,857 bbls. compared with 1,817,000 bbls., a daily average of 259,571 bbls. for the previous week and a daily average of 242,000 bbls. for the four weeks ended August 24. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast Ports—	
Baltimore	259,000
New York	836,000
Others	148,000
Total	1,243,000
Daily average	177,571
At Gulf Coast Ports—	
New Orleans and Baton Rouge	58,000
At all United States Ports—	
Total	1,301,000
Daily average	185,857
Daily average four weeks	242,000

California Oil Receipts

Receipts of California refined oils at East Coast ports during the week ended August 24 totaled 412,000 bbls., a daily average of 58,857 bbls., against 557,000 bbls., a daily average of 79,571 bbls. for the previous week and a daily average of 79,214 bbls. for the four weeks ended August 24. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast Ports—	
Baltimore	157,000
New York	255,000
Total	412,000
Daily average	58,857
Daily average four weeks	79,214

California oil receipts for the week consisted entirely of gasoline.

There were no receipts of California crude or refined oils at Gulf Coast ports for the week.

Shipments of refined products clearing from Los Angeles for the East Coast during the week were as follows:

To New York—72,300 bbls. of fuel oil on the Acme; 81,800 bbls. of gasoline on the Hampton Roads; and 81,200 bbls. of gasoline on the Lio.

To Philadelphia—115,500 bbls. of gasoline on the Sunoil and 55,300 bbls. of gasoline on the Point Breeze.

ROCKY MOUNTAIN AREA

(Continued from Page 54)

chard one of the largest owners of holdings on the structure. Several weeks ago it became known that Mr. Orchard had made a deal whereby he was marketing the oil from the Producers & Refiners well and altogether was running around 1,250 bbls. a day which was being shipped to the Yale Oil Corp.'s new refinery at Billings, Mont. There is speculation as to whether the combined holdings will be operated by Mr. Orchard or turned over to one of the major companies.

The Texas Company operates a refinery at Cody running on Oregon Basin crude. Its supply comes from the Ohio Oil Co. and for a while from the Cody Petroleum Co. wells. The Texas Company has extensive holdings of its own in the field acquired last year but did no drilling until the present time. It is opening a camp and starting its first well.

Might Fit in With Texas Plans

The acquisition of the Orchard properties might fit in nicely with The Texas Company's plans. The Moody-Seagrave interests recently acquired an 80 per cent stock interest in the Cody Petroleum Co. and is not only starting an aggressive drilling campaign in Oregon Basin but is putting down wildcats on the Diamond Basin, Polecat, Cowley and Frannie structures. The Continental Oil Co. and the Ohio Oil Co. likewise have extensive holdings at Oregon Basin. With these four prospective customers in sight it will not be a surprise if Mr. Orchard makes an attractive turn of the properties.

Another of the Salt Creek units is preparing to branch out into other territory. The New Bradford Oil Co., which is a holding company owning 53 per cent of the stock of the Salt Creek Consolidated Oil Co. and 87 per cent of the stock of the Mountain & Gulf Oil Co., has called a special meeting of stockholders for September 30 to approve a deal for the purchase of approximately 80 per cent of the outstanding stock of the Argo Oil Co.

The deal provides for the purchase of 145,000 shares of Argo stock (par $10) for cash at $3 per share and 387,000 shares at the same price in exchange for New Bradford stock of $5 par value. The Argo company has approximately $900,000 in current assets and 1,300 bbls. a day net production in five Wyoming fields and one field in Oklahoma. This deal will give the New Bradford oil production and properties outside of Salt Creek and make it an operating company.

The Carter Oil Co.'s No. 2 State, SW SW Section 16-48-82, Billy Creek Dome, Johnson County, which flowed at the rate of 500 bbls. a day from a total depth of 3,240 feet last week when opened up after standing for 60 days, soon settled down and averaged 130 bbls. a day on a 3-days' pumping test. One completion was reported in West Salt Creek in R. J. Mosher and others' No. 1 Kentz, NW NW Section 4-39-79, which is making 50 bbls. from the shale at 2,113 feet. La Fleishe Oil Co. has a 25-bbl. well in Section 17-46-63, Osage Field, in Weston County.

Natrona County

In Natrona County, the All-States Oil Co.'s No. 1, SE NW Section 1-36-82, North Casper Creek, is still shut down for storage, and its No. 3, SE cor. Section 36-37-82, is drilling at 2,210 feet. The Prairie Oil & Gas Co.'s No. 1 Baird, NE SW Section 22-31-81, Clark Dome, 20 miles southwest of Casper, is drilling at 3,300 feet in the lower Embar in which water was encountered. It will be carried on down to the Tensleep expected at 3,400 to 3,500 feet.

In Big Horn County, the Producers & Refiners Corp.'s No. 3 NW NW Section 24-56-98, Garland Dome, is shut down at 4,187 feet waiting for 4¾-inch casing. At this depth the hole is making around 3,000,000 feet of gas coming either from the bottom of the Embar or the top of the Tensleep. This is a joint operation with the Kinney-Coastal Oil Co. Urdyke & Bridges' No. 1 SE SE Section 30-45-64, Fiddler Creek district, Weston County, is reported to have been turned back to the Teton Oil Co. from which concern it was acquired a few weeks ago. The hole is bottomed at around 1,000 feet and has a fishing job.

In Carbon County, the Midwest Refining Co.'s No. 31, SE Section 1-18-78, Dutton Creek, commenced spudding on August 20 and is below 25 feet. Same company's No. 1, Section 25-37-117, Little Gray River, Lincoln County, is drilling in white sand at 1,506 feet. The Texas Production Co.'s No. 1, NW SW Section 23-45-100, Skelton Dome, Hot Springs County, is drilling at 3,575 feet, and the Midwest Refining Co.'s No. 8, SE Section 6-44-98, Wagonhound Dome, is drilling at 555 feet in soft black shale.

Cleaned Itself While Shut Down

The Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW Section 22-3n-1w, Pilot Butte Dome, Fremont County, cleaned itself this week while shut down waiting for casing and flowed 45 bbls. Total depth is 3,358 feet. The oil is about 37 gravity and very similar to the Salt Creek crude, indicating it may be coming from below, whereas formerly this horizon showed oil with a gravity of 47 degrees.

In Park County, the Midwest Refining Co.'s No. 36 Rosenberg, SE NW Section 25-58-98, Frannie Dome, is drilling at 2,930 feet in white lime and has a good show of oil after going through a water horizon which has been cased off. Its No. 1 Rosenberg, NE cor. Section 26-58-98, is drilling at 1,493 feet in gray shale. The Cody Petroleum Co.'s No. 1 Nelson, SE NE Section 4-51-102, Diamond Basin, is drilling at 4,152 feet with no important change in formation. On the Oregon Basin Dome, the Texas Production Co.'s No. 1 Sonners, NW cor. Section 29-51-100, is building rig, and the Cody Petroleum Co.'s No. 1 Garner, SW NE Section 27-51-101, is drilling at 4,432 feet and getting rather deep. The Big Horn Petroleum Co.'s No. 1 Trumbull, SW NE Section 7-51-100, is shut down at 3,975 feet in the Tensleep. It had a little oil in the top of the Embar followed by water. Charles E. Orchard's No. 1 Owen (formerly Producers & Refiners) SE cor. Section 29-52-100, set the 10-inch at 1,735 feet, and No. 1 Rue, SW NW Section 28-51-100, is drilling at 1,425 feet. Same firm's No. 1 Atherby, SW cor. Section 33-52-100, is bottomed at 1,565 feet and underreaming the 12½-inch.

MONTANA

The Drumhiller well, about 14 miles west of the Sunburst Field, reached a stray sand the past week and found a gas flow and a showing of oil. The gas flow is considered commercial and the sand will be shot before the well is abandoned. At present the sand has been mudded off and a string of pipe set. The hole is at 2,850 feet and expects the Ellis sand in the next 200 feet.

In the Sunburst Field, five new completions were reported. The Fifty Six Petroleum Co. drilled in a well good for 60 bbls. in the Ellis sand at 1,499 feet on Section 30-35-2, the best well for the week.

The Hannah Porter Oil Co. has a new gas well in the Sunburst sand on Section 19-33-1, rated at 7,500,000 feet. The sand was found at 1,228 feet and the well will be used in the gas supply of the Great Falls line.

The Hill Lorensen Syndicate drilling on Section 22-35-2 has a 20-bbl. producer in the Ellis sand at 1,425 feet. The Sweeney Oil Co. has a well of about the same size on Section 29-35-1, in the Ellis sand at 1,517 feet.

The Monopeg Oil Co. found a stray sand at 1,350 feet and shot into production the well will make a small pumper. The Tom Davis Syndicate drilled in a new well on Section 10-35-2, rated at 10 bbls.

In the deep tests in the Sunburst area, the Potlach Oil Co. has cleaned the hole and is drilling again with the hole at 4,636 feet. This test is on Section 21-34-1, and is thought to be well into the Devonian.

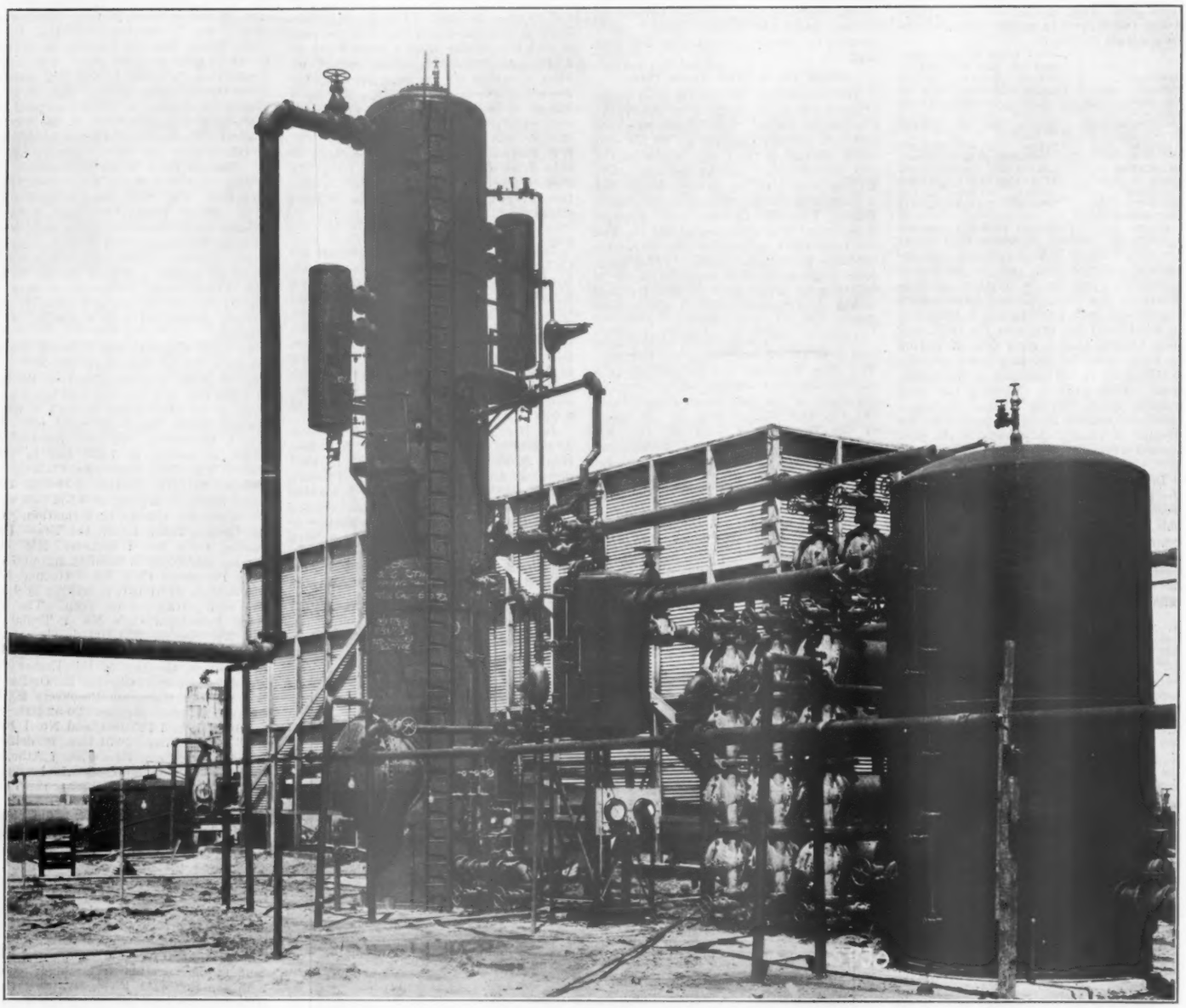
The Advance Oil Co.'s deep test in Sunburst on Section 2-34-1, is fishing for

(Continued on Page 146)

OIL LEASE WATER SYSTEM IS REGARDED AS A MODEL

The Carter Oil Co.'s water system on its M. Harjo lease in the New Little River district is referred to as a model in point of efficiency and looks. An electrically operated air compressor builds up a pressure of 125 pounds in the well which thus automatically produces 50,000 gallons of water daily for household use in company dwellings, for cooling engines and for any other purposes. The well is 700 feet deep. T. R. Crow, chief engineer, admits he is a little proud of the smooth-working character of the water plant and its attractive appearance.

ERECO EQUIPMENT IS GOOD!



ERECO equipment at the Kingsmill, Texas, plant of the Forrest E. Gilmore Company. Another instance of the growing popularity of ERECO equipment with plant operators who are not in business for their health.

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Natural Gasoline Manufacture

BECKLEY PRESIDENT OF CALIFORNIA ASSOCIATION

At a meeting of the board of directors of the California Gasoline Association held on August 15, George Ratcliffe's resignation as president was accepted and R. E. Beckley of the Standard Gasoline Co. was elected president. Mr. Beckley was formerly vice president and this position has been filled by R. W. Garman, manager of the gas department of the Union Oil Co.

Ray Wheeler of the General Petroleum Corp. was made a director and member of the executive committee. M. P. Simon of the State Gasoline Corp. was also made a director. Mr. Wheeler and Mr.

R. E. Beckley

Simon were elected to fill vacancies on the board. Mr. Ratcliffe resigned to become president and general manager of the California Talc Co.

R. E. Beckley was born in South Dakota 41 years ago and come to California at an early age. He graduated from Stanford University in 1910 in mechanical engineering and entered the oil fields at Coalinga in December, 1910. He became interested in natural gasoline in 1912 and two years later moved to Taft in charge of gas and gasoline production for the Pacific Oil Co., resigning in 1917 to become assistant superintendent for Wallace re-

(Continued on Page 146)

ANNOUNCE PLANS FOR TWO PLANTS IN TEXAS

The South Plains Pipe Line Co. is to build a 35,000,000-cubic-foot-per-day gasoline plant in Section 45, Block 2, A.B.& M. Survey, Potter County, stripping gas going through their line to Lubbock and Midland, Tex. It is to be of the Tulsa type, with two units.

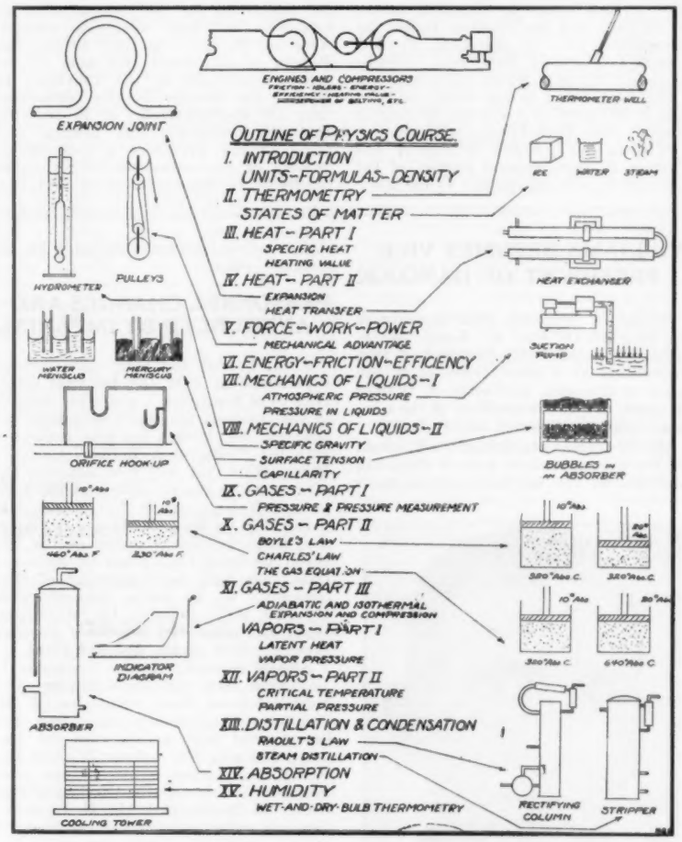
The Cockrell-McIlroy Co. is to build a gasoline plant in the south half of the northeast quarter of Survey 50, Block 25, H.&G.N. Survey, near Clayton, Tex. The capacity will be 20,000,000 cubic feet per day, and is to be the Southwestern type with two units. Two 165-horsepower engines and compressors and four 165-horsepower Clark engines and compressors are to be installed. Gas will be used from the Shamrock Oil Co.'s Clayton and Chapman leases, and it is possible that some outside gas will be used, but as yet no contracts have been made.

Disposition of the gasoline output will be made through a 10-mile 2-inch welded line from the plant to McLain, Tex.

STANDARD OIL COMPANY OFFERS EMPLYOYES COURSE IN PHYSICS

"The Physics of Casinghead Gasoline Manufacture" is a new course which has been made available to all employes of the Standard Gasoline Co., a subsidiary of the Standard Oil Co. of California. The Standard company, which is the largest manufacturer of natural gasoline in California, for several years has offered various courses to employes with the view of aiding them in their work.

It is pointed out in connection with the new course that natural gasoline plants are built and operated upon the basic laws of physics. The new course seeks to acquaint the employes with the fundamental laws of physics with a study of their application in natural gasoline plant construction and operation.



The Booster, official publication of the Standard Gasoline Co., explains the course as follows:

"A new course in the Physics of Casinghead Gasoline Manufacture has been prepared particularly for employes of the Standard Gasoline Co. This course explains in a simple understandable manner the fundamental laws of physics which govern the behavior of gases and liquids under various pressures and temperatures and leads the student step by step through all the equipment of a complete plant.

"This course of instruction was written by R. B. Bowman, an employe of the Standard Gasoline Co., with considerable experience in both southern and northern divisions and a graduate in physics from the California Institute of Technology.

"About 60 students were enrolled in this course last spring to get a practical demonstration of its reception by members of various departments. The enthusiasm with which it was received and the comments of many who have already completed the work have convinced us that the greater portion of our employes who are always anxious for additional information, will want to take up this study. It has therefore been decided to offer it to everyone who desires a better understanding of plant operation and who is willing to do a reasonable amount of studying to that end.

"The course comprises 15 lessons. It is understandable by men with a limited education and is more than a review for those who have taken physics before, since it is directly applied to our own daily problems.

"The cost is $10 for the complete course and may be paid by pay roll deduction either in full on the 15th of the month following enrollment or in three monthly installments of $5, $2.50 and $2.50. Personal checks or cash with the enrollment is acceptable if any prefer this method of payment to pay roll deductions.

"There is no time limit set in which the course must be completed as in the company school subjects, but for the best results students are urged to complete at least one lesson per week, if consistent with other obligations, as long delays between assignments necessitate too many reviews and lessen the interest of the work."

DETECTING TROUBLES IN SAFETY VALVE OPERATION

By H. S. Peters
Columbian Gasoline Corp.

The safety valve is the most important and indispensable of the various safety devices with which a boiler or other pressure vessel is equipped. It is a special device perfected by human ingenuity for the limiting and relieving of pressure and keeping pressures within certain bounds. If the safety valve is selected to meet the conditions, properly installed, satisfactorily maintained, and periodically tested, it can be relied upon to function with greater certainty than any other kind of limiting device known.

The actual work of a safety valve is to relieve any pressure vessel from a pressure which may become dangerous and cause an explosion, therefore the safety valve is a safety guard only when it is correctly maintained and kept in good condition.

The old level and weight valve which was used for many years has been outlawed and is no longer used. The spring pop valve is the standard valve of to-

(Continued on Page 152)

PATENT HELD INVALID BY COURT OF APPEALS

WASHINGTON, D. C., Aug. 31.—In the case of the Carbide & Carbon Chemicals Corp. against the Phillips Petroleum Co. the Circuit Court of Appeals for the Third Circuit has held that the patent granted to De Bray for a process for making gasoline from natural gas is invalid. This decision affirmed decisions of lower courts.

This case, when tried in the lower courts, involved the validity of the so-called stabilizer patents in the manufacture of natural gasoline. The Carbide & Carbon Chemicals Corp., which licensed the process to natural gasoline manufacturers, brought suit against the Phillips company, alleging infringement. The Phillips company attacked the validity of the plaintiff's patents based on prior art and won a decision in the lower courts. The Carbide company then appealed the decision.

A PRACTICAL SUGGESTION

A BLENDING METHOD

Motor fuel blends of naphtha and natural gasoline are not made at the gasoline plants as extensively as a few years back because of the efficient fractionating columns at refineries, which permit much deeper and heavier cuts in making end-point gasoline and therefore require natural gasoline to be blended at the refinery; also because gasoline plant stabilizers lower the vapor pressure so that blending before shipment is not necessary.

Although gasoline and even very heavy naphtha will not stratify after they have been intimately mixed, still if they have not been thoroughly blended diffusion is slow process and if resorted to will likely give an inferior and not a uniform blend.

This method insures a homogeneous product and also minimizes the fire and explosion hazard. Gasoline is blended in a pressure tank where a pressure of about 2 pounds may be maintained by a pressure relief valve. The escaping vapors, if any, are piped to or near the

(Continued on Page 152)

Practical suggestions by those connected with the construction and operation of natural gasoline plants are invited. Payment will be made as soon as suggestions are accepted. Address all communications to the Natural Gasoline Department, The Oil and Gas Journal, Tulsa.

Brief Items for Petroleum Refiners

Shell Corporation Buys Western Oil Refining Company

The Western Oil Refining Co. of Indianapolis, one of the largest jobbing concerns in the Middle West, last week was sold to the Shell Petroleum Corp. The sale includes 45 bulk stations and 215 filling stations in Indiana and Ohio. The purchase price was not announced.

The Western company was organized in 1910 by J. H. Trimble and associates. Other officers of the company were Lucius French, secretary; W. H. Trimble, treasurer, and R. R. Trimble, director. J. H. Trimble will not be connected with the business in the future but all of the other officers and employes will continue with the new ownership. J. H. Trimble and Mrs. Trimble at present are making an auto tour of Europe. The J. H. Trimble Realty Co. of Indianapolis was not included in the purchase.

In connection wtih the purchase the Shell Corp. has announced that the corporation's marketing headquarters for Indiana will be established at Indianapolis. The business relationship between the Shell and Western companies has been close for several years. During the past six years the Shell has furnished under contract a large part of the gasoline and other products sold by the Western company.

The acquisition of the Western properties will very materially strengthen the position of the Shell corporation in Indiana and Ohio. The Shell corporation for several years has had stations in both states. These will be merged with the Western properties. It is believed that with Western stations the Shell corporation will be the second largest distributor of gasoline in Indiana.

The Western company for several years specialized in a high gravity gasoline which was sold under the trade name of "Silverflash."

ORGANIZE COMPANY TO OPERATE McCOOK PLANT

CHICAGO, Aug. 31.—The plant of the Inter-Ocean Refining Co. at McCook, Ill., which was recently purchased by the Peoples Gas By-Products Co., a subsidiary of the Peoples Gas Co., has been leased by the new owners to H. A. Fouts and associates who will operate the plant for the refining of lubricating oils, gasoline, kerosene and fuel oil. The organization which will operate the plant will be known as the Fort Dearborn Refining Co. and will be headed by Mr. Fouts as president. Mr. Fouts has been active in the refining industry for over 20 years and recently was the president and general manager of the Deepwater Refineries of Houston, Tex. A well-known plant superintendent has been secured as plant manager. The work of reconditioning the 5,000-bbl. plant will begin immediately and refining operations will be under way by October 1. The plant was built some 12 years ago with a special cracking process. It has been shut down for several years.

PHILLIPS BUYS STATIONS

The stations of the State Oil Co. located at Lincoln, Neb., have been purchased by the Phillips Petroleum Co. Fifteen stations are involved in the purchase. The State company was one of the oldest jobbing concerns in Nebraska. R. S. King was president of the company.

The purchase marks the entry of the Phillips company into Nebraska retail distribution.

NATIONAL PETROLEUM ASSOCIATION PREPARES INTERESTING PROGRAM

An exceptionally interesting program is being prepared for the annual meeting of the National Petroleum Association which will be held at the Hotel Traymore, Atlantic City, September 18, 19 and 20, according to Fayette B. Dow, general counsel of the association.

Among the features already announced will be a discussion of the Code of Ethics as recently approved by the Federal Trade Commission. E. S. Hall of the Standard Oil Co. of New Jersey will lead the discussion which will clear up many of the questions concerned with the application of the code.

L. M. Fanning in charge of the Public Relations Department of the American Petroleum Institute will speak on the subject, "The Oil Industry and the Public." Present economic conditions in the oil business and the probable future developments will be discussed by Dr. Joseph I. Pogue of New York. Conditions in California whose operations are a dominant factor in the entire industry will be discussed by a speaker thoroughly familiar with West Coast conditions.

William Muir, Frank B. Fretter and Fayette B. Dow, general counsel of the association, will pay tribute to the memory of the late Judge C. D. Chamberlin for many years the active head of the association.

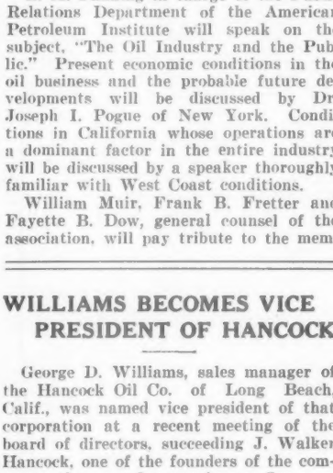
R. A. Wotowitch, trustee in charge, will present the various subjects within the field of the Department of Welfare and Insurance. James H. Herbert, president of the Fire and Safety Marshals; J. J. Forbes of the Bureau of Mines, Houston Dunn, secretary-treasurer of the National Mutual Fire Insurance Co., and Willis Crane, traffic attorney of the association will also discuss departmental activities. Other features of the program will be announced later.

In view of this annual meeting the Interstate Commerce Commission has set for hearing at the Traymore on Tuesday, September 16, the proposed revision of its regulations for the transportation of explosives and other dangerous articles. Also on Monday, the day before, the Bureau of Explosives will hold an informal conference at the Traymore to discuss the changes in the regulations that are contemplated. It is expected that the conference and hearing will bring to the Traymore a considerable number of representatives of companies interested in transportation by tank car.

WILLIAMS BECOMES VICE PRESIDENT OF HANCOCK

George D. Williams, sales manager of the Hancock Oil Co. of Long Beach, Calif., was named vice president of that corporation at a recent meeting of the board of directors, succeeding J. Walker Hancock, one of the founders of the company, who passed away August 3.

Mr. Williams, who joined the Hancock Oil Co. during its first year of operation in 1923 and who has been sales manager



George D. Williams

since 1925, will continue in active charge of the company's sales organization, and also will have general supervision over the refinery, pipe line and marine terminal departments.

Mr. Williams has been a member of the Hancock directorate since 1926. He has had a wide range of experience in the oil industry and is well known throughout California petroleum circles. Prior to coming to California he was associated with the Cameron Refining Co. of Ardmore, Okla.

PERSONNEL CHANGES ARE ANNOUNCED BY IMPERIAL

J. L. Farrell has been made general superintendent over the Imperial refineries as of September 1 and other changes in the company personnel have been announced. Mr. Farrell has been connected with the Producers & Refiners Corp. at Parco, Wyo., but will now maintain his offices in the general offices of the company in Tulsa.

Effective on the same date, J. F. Reardon, formerly superintendent of the Imperial Refining Co.'s plant at Ardmore, Okla., has been made manager of that company. W. M. Perry, formerly with the Mid West Refining Co. at Casper, Wyo., has taken Mr. Reardon's place as superintendent of the Ardmore plant.

Several changes, effective September 1 also have been announced in the sales organization of these companies. J. B. Saunders, as previously announced, has been named sales manager of the Imperial Refining Co. and the Wickett Refining Co., having formerly been sales manager for the Kettle Creek Refining Co. at El Dorado, Ark. H. E. Erickson, formerly sales manager for the Houston Oil Co. at Camden, Ark., has taken Mr. Erickson's place in the Kettle Creek organization at El Dorado.

COMPLETE OLD DUTCH PLANT

CHICAGO, Aug. 31.—The Old Dutch Refining Co., in which Hughes & Co. of Chicago are interested, is ready to begin test runs. The refinery is located at Muskegon, Mich., and will run on Dundee crude, making a specialty of naphthas but refining gasoline and other products as well.

DENNIS W. McGRAW, SR., DIES

Dennis W. McGraw, president of the Oil Creek Refining Co., Titusville, Pa., died Wednesday, August 28, following a brief illness. Mr. McGraw was well known in eastern refining circles. He organized the company of which he was president in 1918.

Annual Meeting of Safety Directors to Be Held in Chicago

The annual meeting of the Petroleum Section of the National Safety Council will be held at the Congress Hotel, Chicago, October 1 to 3 inclusive in connection with the eighteenth annual safety congress. The congress includes meetings of safety sections in all the major industries and is one of the largest attended gatherings of the year.

Under the direction of C. W. Smith, director of safety for the Standard Oil Co. of Indiana, a three-day program has been prepared. The program includes papers by several of the outstanding authorities on safety work in the petroleum industry. Opportunity for discussion will be given following the presentation of all papers.

Following is the program for the business sessions:

Tuesday Morning, October 1

Congress Hotel, second floor, Florentine Room.

9:30 Looking Backward as We Go On—General chairman C. W. Smith.

9:50 Accident Prevention Is an Organization Builder—L. S. Wescoat, vice president and general manager, marketing department, the Pure Oil Co., Chicago.

10:20 Reaching Our Patrons With Safety—A. A. Nicholson, The Texas Company, New York City.

11:00 Discussion.

11:20 The Distribution of Accident Prevention Costs—Charles M. Mills, assistant to the president, Standard Oil Co. of Ohio, Cleveland.

11:40 Discussion.

(Continued on Page 146)

ENDURANCE PLANE USES DEEP ROCK PRODUCTS

SKY HARBOR, CHICAGO, Sept. 3.—The endurance plane, Chicago We Will, which is attempting to break the record of the St. Louis Robin, here above Sky Harbor is flying under the power of Deep Rock aviation gasoline and is lubricated with Deep Rock motor oil, both of which are supplied by the Shaffer Oil & Refining Co. of Chicago, makers of Deep Rock products.

The plane which today started on its second week of continuous flying is using Shaffer's certified registerer oil which is known as Deep Rock Prize Oil. At noon today, the We Will had been aloft 265 hours and had made its sixty-fifth refueling contact successfully. The plane still has six days to go before it surpasses the record of the Robin.

ENJOIN TAX PAYMENT

CHICAGO, Aug. 31.—The Chicago Motor Coach Co. has secured a court order enjoining the Illinois Department of Finance, which has charge of the collection of the gasoline tax, from paying the sum collected from the coach company on its August gasoline into the state treasury. The coach company has filed suit attacking the new gasoline tax law which went into effect on August 1, on about the same grounds as formed the basis for the complaint which resulted in the declaring the former law unconstitutional. Several of the reasons urged by the coach company in its present suit have been met in decision in the former case and not in a way to favor the present plaintiff. The reason for asking a temporary injunction is that the money once paid into the state treasury can only be secured from the treasury by an appropriation of the state legislature.

Big Labor Day Consumption in Chicago

Three Days Holiday Perfect for Motoring. Spot Business Light Tuesday Morning Without Rush Orders

By J. B. Waldo

CHICAGO, Sept. 3.—The weather over the three days' holiday was perfect for motoring in this region and the autos were out in great numbers. Scattering reports indicate a very large gasoline distribution over the territory but as station managrs were busy until late Monday night few have checked their sales and stocks and reported to headquarters. Jobbers had made ample provision for the business done and the spot business this morning is light and there are no rush orders. There are no price changes, the major refiners quoting 7¾ cents for U. S. Motor gasoline. Prices on other products are unchanged from the close of last week.

Jobbers Prepared Liberally

The demand for gasoline was good during the first part of last week, very largely on account of Labor Day.

Jobbers prepared liberally for the week-end consumption and there were some who wanted cars to reach them at the close of last week but many were preparing for the refilling of their tanks after the drain of a large business on Labor Day. Most of the orders were on contracts, the spot buying being restricted more by the limited number of such buyers than by the lack of orders from those who still order in the spot market.

Last year during August, the spot price was at the peak and good gasoline was rather hard to purchase for immediate delivery. Many of the contracts made a year ago expired in August and one of the important efforts of the sales departments of the major refiners last month was to renew just as many of the old contracts and make as many new ones as possible.

Judging from statements made by several of the larger refiners, they are meeting with about the average success. Many of the jobbers, probably around one-half of those whose contracts have expired, have renewed their agreements for another year and some of those who have not actually placed their names on the dotted line, have agreed to do so, being prevented by some matter of personal convenience. There are still jobbers who are waiting a little before making up their minds but the probability is that when the next active gasoline season opens in 1930, there will be just as many jobbers under contract as this year and the ranks of the spot buyers will not be any larger than they have been during 1929 to date.

Lukewarm Regarding Marginal Contract

There are refiners as well as jobbers who do not have entire faith in the merit of the marginal contract. The viewpoint is different but the result is the same, namely, that the jobber cannot be held to any contract when the contract price is higher than the spot market unless he has a rare sense of fidelity to his word.

The active head of one of the large refining organizations in speaking of the price situation said that his company knew it was not getting all of the business of many of its contract customers when the spot price was so much lower than the contract price this season, but that nothing could be done about it. If the company insisted that the jobber observe his contract, it would probably lose a customer who after all was a large buyer of gasoline and other products.

This refiner stated that in his opinion the Group 3 market for U. S. Motor gasoline should not have been advanced higher than 8½ cents, at least until such a time as the bidding of buyers for gasoline forced the advance. He says that if the market had not gone over 8½ cents the Mid-Continent refiners would have operated at much nearer their capacity and made more money. One reason why some of the jobbers right now are holding off from signing contracts is that not only the refiners' spot prices but the contract prices are much higher than the cost of an equal grade of gasoline in the spot market.

Little Change in Contracts

The contracts offered to the jobbers this season are little changed from those of last year as amended. A year ago the adopted form of contract provided for a 3½-cent guarantee under the tank wagon price with a "split" of the margin under certain conditions of the refinery and the tank wagon price. After the reduction of the spread between the tank wagon and the service station price to 1 cent, most of the contracts were changed to allow a 4-cent guarantee.

The new contracts provide for the 4-cent guarantee and in deference to the strong opposition of most jobbers, the "split" has been eliminated, largely because of the uncertainty which it gave to the contract.

There is no present complaint regarding the amount of the orders from individual jobbers on their contracts. They are ordering freely to the full requirements of the contract and are purchasing little material on the side, it is believed. The spot buyer, if he is to make a success of his purchasing, must be a shrewd buyer. He must know conditions in the market and the quality of material that is refined by the different plants in order to keep his grade up to the standard which he has set for his stations.

Cheap gasoline is sometimes expensive to the jobber. The story is being told locally of one of the large distributors near this city who purchased several cars of low-priced gasoline and emptied the cars into his storage without the careful examination that he should have given it. He is stated to have said later that he would give $1,000 to get the cheap gasoline out of his tanks as it had given an unpleasant odor to the entire contents. When gasoline is offered for sale at less than the low of the prevailing market, there is usually some reason for it, and it may be in the gasoline.

Market Price 7½ to 7¾ Cents

The market price all of last week was close to 7½ to 7¾ cents, the latter being the price maintained by the major refiners. There was talk early in the week regarding an advance to 8 cents, Group 3, for U. S. Motor gasoline, but nothing has come of it as yet and the general opinion is that it would be more discreet at least, to let the price stay where it is, until the September demand has been shown and its strength fairly well gauged. In the usual course of the season, there will be less gasoline consumed and less gasoline bought by jobbers in September than in August. Stocks are being drawn upon in the larger refining centers but they are still considered as ample for all contingencies as they are larger than a year ago. In spite of all statements regarding the result of the gas conservation law in California and the conservation movement in the Mid-Continent Field, there is a very general feeling that there is bound to be a general readjustment of the price structure some time this fall.

There has been no improvement in the demand for the higher gravities in this market. The favor accorded to the anti-knock gasolines is unabated and it would seem that the number of stations which supply U. S. Motor and an antiknock gasoline only is steadily increasing. It simplifies the station business and according to jobbers they find that it pays. The jobbers with or without antiknock gasoline have had a good year and those of them who still want to dispose of their business will have a good profit statement to show to any possible buyers that come along. Even in Ohio it is stated that many jobbers have had a profitable season although there has been none of the stability to the station prices that has made the situation with the jobber in the Indiana territory so favorable.

Kerosene Active

Kerosene is still active and strong The demand results from the use of the tractor on the farms and in road use to some extent. Right now the small grain harvest is drawing to a close and is over in the central and southern parts of this territory. The needs for fall plowing may cause some later demand but the outlook is that the large business has been done for the present season.

Considerable kerosene from Ohio and even Pennsylvania has moved into parts of this territory and one of the larger organizations has bought kerosene at Toledo which it has brought around by boat to the northern Wisconsin and Michigan ports.

Lake transportation is having a decided increase in importance this season. Gasoline and other materials are being advantageously shipped by tanker from refineries to many ports and then hauled back into the interior by tank cars. Last summer when the Midwest refineries were running at a low capacity, the Standard Oil Co. shipped gasoline from Whiting to Superior where it was loaded into tank cars and hauled to the Dakotas. This transportation is inexpensive as compared with rail freights.

Furnace Oil

Furnace oil distributors are slowly taking in some furnace oils. There is no rush but orders for small quantities come from all parts of the territory, ranging from one car up to several.

Zero Gas Oil

The refiners are offering little distillate or zero gas oil and their prices are high as compared with the recent market. Some refiners are asking 3 cents for a good zero gas oil and 3¾-cent quotations for 38-40 straw distillate are common. Some are naming 4 cents for this grade of oil. Some distributor storage has been filled, but there are empty tanks that will be filled between now and October and refiners hope that the market will advance to their idea of what the price should be. There is little doubt that many of the local distributors are pretty well covered and are in position to stay out of the market for some time. The out-of-town and smaller distributors are the ones that have yet to take in the bulk of their supplies for the opening of the season.

Fuel Oil Market

The fuel oil market has been rather quiet and as a result right at the close of last week, possible buyers were being sought actively in many cases to accomplish the sale of what might be called the remnants of the August purchases by the tank car dealers who had a few cars of mixed material which they wanted to close out. While refiners have been advancing their prices for heavy fuels, the local market has failed to respond and good orders have been booked at prices which were actually less than the oil could be bought at today, the cause being the earlier date at which the oil was bought and the light demand which prevented it being sold at a better profit.

Some of the fuel oil bought has not been delivered and it is doubtful if it will be delivered this season. This fuel oil was bought from refiners who have closed down on account of crude troubles and may not be able to start in time for this season, if at all. There have been contracts, some of them calling for large quantities of oil and extending over periods of 12 to 15 months, which were covered by contracts with West Texas refiners who are not able to deliver this fall or winter. When to this deficiency in the supply is added that caused by the withdrawal of all offers by the Shell people it leaves quite a quantity of oil to be obtained from other sources.

Cracking of Fuel Oils

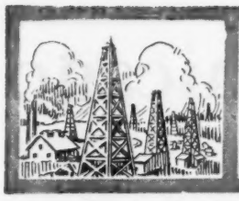
Regarding the cracking of heavy fuel oils, this is something that will fluctuate with the gasoline demand and the crude prices. With lower crude costs less fuel oil would be cracked. If the refiners crack all of their fuel oil what will they do with all the gasoline? This is a common query. If they do not crack their fuel oil what will they do with it? The trade here believes that as soon as the gasoline demand slackens, refiners will be more willing to part with their fuel and gas oil and that they will find both to sell. On present orders several refiners are now quoting 57½ cents for their 18-22 fuel oil with an ordinary cold test and low sulphur content. One refiner with a good grade of low sulphur oil, 16-20 gravity, is asking 55 cents from consumer buyers. The higher gravities in low sulphur oils are already hard to buy and prices are from 2½ to 5 cents higher on the zero cold tests in these gravities.

Bright Stocks

There have been some inquiries for large quantities of bright stocks by refiners and in smaller quantities by other buyers. One compounder stated that he has just ordered out the last car of his spring purchases and was again in the market for additional quantities. His early purchases were much larger than a year ago. Many others are in the same position. While the chief cause for the shortage in bright stocks is the increased percentage of bright stocks required by the motor cars with higher compression, practically all of the various oils provided this year show a higher percentage of that oil. Still an important contributing cause has been the fact that many of the chief producers of bright stocks have been running less of the crude from which the stock can be made. Seminole crude, which is the chief pipe line oil, is not a good oil for bright stock. The demand for motor oils has been fairly large and heavier oils are being replaced by those better adapted to the colder weather.

Tank Wagon Market

The tank wagon market has not been changed and no immediate change is looked for. The desire of the larger distributors is to hold the market as long as the consumption continues large for th time of the year. The absorbing, through purchase, of independent distributors had another noteworthy demonstration when the Western Oil Refining Co. of Indianapolis was bought out by the Shell Petroleum Corp. at a high price for cash. The Shell corporation has been supplying the Western Oil Refining Co. with its gasoline for several years and knows the value of the business. The number of stations both bulk and service and the quantity of gasoline sold by the new member of the Shell organization will go far to make this organization a leading factor in the business of that State, if not the largest distributor of gasoline. The same organization is given credit by common report for being aggressive in its present expansion program and others are as active along the same lines.



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

OKLAHOMA (Group 3)—	Sept. 3		Aug. 27		Aug. 20	
50-52 450 endpoint	.07¼	.07½	.07½	.07¾	.07½	.07¾
56-58 450 endpoint	.07¼	.07½	.07¼	.07½	.07	.07¼
*58-60 437 endpoint (U. S. Motor)	.0775		.0776		.0778	
*60-62 437 endpoint	.0756		.0775		†.07¼	.07⅜
*60-62 400 endpoint	.08		†.08		.08	
*64-66 375 endpoint	†.08¼	.08½	.085		.085	
68-70 360 endpoint	.08¼	.08½	.08¼	.08½	.08¼	.08½
64-66 437 endpoint (blend)	.07¼	.07½	.07¼	.07½	.07	.07¼

*Weighted average prices September 2, August 26 and 19, as reported by representative refiners. Sales to jobbers only. †No sales reported to jobbers. Price shows general market.

NORTH TEXAS—						
56-58 450 endpoint	.07	.07¼	.07	.07¼	.07	.07½
58-60 460 endpoint	.07	.07¼	.07	.07¼	.07	.07¼
58-60 437 endpoint (U. S. Motor)	.07½	.07¼	.07¼	.07⅜	.07½	.07¼
60-62 400 endpoint	.07¼	.07⅜	.07⅜	.07½	.07¼	.07⅜
64-66 390 endpoint	.07⅜	.07½	.07½	.07⅝	.07½	.07⅝
64-66 375 endpoint	.07⅞	.07¾	.07¾	.08	.07¾	.07⅞
68-70 360 endpoint	.08	.08¼	.08	.08¼	.08	.08¼
64-66 437 endpoint (blend)	.07	.07¼	.07	.07¼	.07	.07¼
*NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.08	.08½	.08½		.08½	
*ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.08	.08½	.08½		.08½	
PENNSYLVANIA—						
52-54 Naphtha	.08½	.09½	.08½		.08½	
54-56 Naphtha	.08½	.08¾	.08½	.08¾	.08½	.08¾
58-60 Gasoline	.08¾	.09	.08¾	.09	.08¾	.09
60 Gasoline	.09	.09¼	.09	.09¼	.09	.09¼
62 Gasoline	.09¼	.09½	.09¼	.09½	.09¼	.09½
64 Gasoline	.10	.10½	.10½		.10½	
68-70 350 endpoint gasoline	.11		.11		.11	
CALIFORNIA—						
58-60 437 endpoint (U. S. Motor) domestic	.09	.10	.09	.10	.09	.10
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.07½		.07¼	.07½	.07¼	.07½
56-58 450 endpoint	.07⅜	.07½	.07¼		.07¼	
58-60 437 endpoint (U. S. Motor)	.07⅜	.07¾	.07½	.07¾	.07½	.07¾
60-62 400 endpoint	.07¾	.08	.07¾	.08	.07¾	.08
64-66 375 endpoint	.08	.08¼	.08	.08¼	.08	.08¼
68-70 360 endpoint	.08¼	.08½	.08¼	.08½	.08¼	.08½
64-66 437 endpoint (blend)	.07⅝	.07⅞	.07½		.07¼	.07½
GULF COAST (Export)—						
58-60 (U. S. Motor)	.08½		.08½		.08½	
60-62 400 endpoint	.09½		.09½		.09½	
61-63 390 endpoint	.09¾		.09¾		.09¾	
64-66 375 endpoint	.10		.10		.10	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

NATURAL GASOLINE

OKLAHOMA (Group 3)—	Sept. 3		Aug. 27		Aug. 20	
Grade A, 72-79.9, 375 e.p., rec. 90%	.06½	.06¾	.06¾	.07	.06⅝	.06¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06½	.06¾	.06¾	.07	.06⅝	.06¾
Grade B, 76-83.9, 375 e.p., rec. 85%	.06¼	.06½	.06⅝	.06¾	.06½	.06⅝
Grade BB, 84-92, 375 e.p., rec. 85%	.06¼	.06½	.06⅝	.06¾	.06½	.06⅝
Grade C, 80-90, 375 e.p., rec. 78%	.06¼	.06½	.06⅝	.06¾	.06½	.06⅝
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06½	.06¾	.06¾	.07	.06⅝	.06¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06½	.06¾	.06¾	.07	.06⅝	.06¾
Grade B, 76-83.9, 375 e.p., rec. 85%	.06¼	.06½	.06⅝	.06¾	.06½	.06⅝
Grade BB, 84-92, 375 e.p., rec. 85%	.06¼	.06½	.06⅝	.06¾	.06½	.06⅝
Grade C, 80-90, 375 e.p., rec. 78%	.06¼	.06½	.06⅝	.06¾	.06½	.06⅝
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.06¾	.07	.07	.07½	.06¾	.07
Grade BB, 84-92, 375 e.p., rec. 85%	.06⅝	.06¾	.06⅞	.07⅛	.06⅜	.06½
Grade C, 80-90, 375 e.p., rec. 78%	.06⅞	.06¾	.06⅞	.07⅛	.06⅞	.06⅞
CALIFORNIA—						
75-78 375-390 endpoint	.08¾	.09¼	.08¾	.09¼	.08¾	.09¼
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06⅝	.06¾	.06¾	.07	.06½	.06⅝
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06⅝	.06¾	.06¾	.07	.06½	.06⅝
Grade B, 76-83.9, 375 e.p., rec. 85%	.06⅜	.06½	.06¾		.06½	.06⅝
Grade BB, 84-92, 375 e.p., rec. 85%	.06⅜	.06½	.06¾		.06½	.06⅝
Grade C, 80-90, 375 e.p., rec. 78%	.06¾	.06½	.06¾		.06½	.06⅝

BURNING OIL

OKLAHOMA (Group 3)—	Sept. 3		Aug. 27		Aug. 20	
41-43 water white kerosene	.05½	.05¾	.05½	.05¾	.05¼	.05⅝
42-44 water white kerosene	.05⅞	.06¼	.06	.06¼	.05¾	.06⅛
*NORTH LOUISIANA—						
41-43 water white kerosene	.06	.06¼	.05¾	.06	.05¾	
NORTH TEXAS—						
41-43 water white kerosene	.05¼	.05⅜	.05¼	.05⅜	.05	.05⅛
40-42 water white kerosene	.05	.05⅛	.05	.05⅛	.04¾	.05
*ARKANSAS—						
41-43 water white kerosene	.06	.06¼	.05¾	.06	.05¾	
PENNSYLVANIA—						
43 Kerosene prime white	.06	.06¼	.05¾	.06	.05¾	.06
45 Kerosene water white	.06¼	.06½	.06	.06¼	.06	.06¼
46 Kerosene water white	.06½	.06¾	.06¼	.06¾	.06¼	.06½
47 Kerosene water white	.06¾	.07	.06¾	.07	.06½	.06¾
300 Mineral Seal	.06½	.07	.06½	.07	.06¾	.07
CALIFORNIA—						
38-40 water white Kero. (high-burning test)	.05½	.06	.05½	.06	.05½	.06
Engine distillate, 43-44, 445 endpoint	.08	.08¾	.08	.08¾	.08	.08¾
Engine distillate, 42-44, 480 endpoint	.07½	.08¼	.07½	.08¼	.07½	.08¼
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.05½	.05¾	.05½	.05¾	.05¼	.05½
42-44 water white kerosene	.05¾	.06	.05¾	.06	.05½	.05⅝
GULF COAST (Export)—						
41-43 prime white	.07		.07		.07	
41-43 water white	.08		.08		.08	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

OKLAHOMA (Group 3)—	Sept. 3		Aug. 27		Aug. 20	
Below 18 Fuel Oil, per bbl.	.50	.55	.45	.50	.40	.50
18-22 Fuel Oil, per bbl.	.55	.60	.50	.55	.50	.55
20-22 Fuel Oil, per bbl.	.57½	.62½	.55	.60	.55	.60
22-26 Fuel Oil, per bbl.	.70	.75	.65	.70	.62½	.67½
24-26 Fuel Oil, per bbl.	.72½	.77½	.72½	.77½	.70	.75
26-30 Fuel Oil, per bbl.	.80	.85	.80	.85	.80	.85
28-30 Fuel Oil, per bbl. (industrial)	.90	.95	.85	.90	.85	.90
32-36 Gas Oil (industrial)	.02½	.02⅝	.02½	.02⅝	.02½	.02⅝
32-36 Gas Oil (straw color)	.02⅝	.02⅞	.02⅝	.02⅞	.02⅝	.02⅞
36-38 Distillate	.03½	.03⅝	.03⅜	.03⅝	.03¼	.03⅜
38-40 Straw Distillate	.03⅜	.03⅞	.03⅝	.03⅞	.03½	.03¾
NORTH TEXAS—						
Below 20 Fuel Oil	.60	.65	.60	.65	.60	.65
24-26 Fuel Oil, per bbl.	.65	.70	.65	.70	.65	.70
32-36 Gas Oil (straw)	.02⅝	.02¾	.02⅝	.02¾	.02⅝	.02¾
38-40 Straw Distillate	.03½	.03¾	.03½	.03¾	.03⅜	.03⅝
*NORTH LOUISIANA—						
18-20 Fuel Oil, per bbl.	.70	.75	.75		.75	
30-32 Gas Oil	.02¾	.03	.02¾	.03	.02¾	.03
*ARKANSAS—						
33-36 Distillate	.03	.03¼	.03	.03¼	.03	.03¼
30-32 Gas Oil	.02¾	.03	.02¾	.03	.02¾	.03
16-22 Refinery Fuel Oil, per bbl.	.70	.75	.75		.75	
GULF COAST (South Texas)—						
Gas Oil	.03¾	.04	.03¾	.04	.03¾	.04
Bunker C Fuel (cargo lots), per bbl.	.70	.80	.70	.80	.70	.80
Bunker C Fuel (small lots)	.95	1.00	.95	1.00	.95	1.00
PENNSYLVANIA—						
30-34 Fuel Oil	.04	.04¼	.04	.04¼	.04	.04¼
36-40 Fuel Oil	.04¼	.04⅜	.04¼	.04⅜	.04¼	.04⅜
CALIFORNIA—						
33-36 Distillate	.04	.04½	.04	.04½	.04	.04½
26-32 Distillate	.03	.03½	.03	.03½	.03	.03½
15-20 Fuel Oil, Bunker (at tide water)	.65	.85	.65	.85	.65	.85
15-20 Fuel Oil (cargo lots), per bbl.	.70	.85	.70	.85	.70	.85
27 plus Diesel, per bbl.	.90	1.05	.90	1.05	.90	1.05
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, per bbl.	.65	.70	.62½	.70	.62½	.67½
18-22 Fuel Oil, per bbl.	.52½	.57½	.52½	.57½	.50	.55
28-30 Fuel Oil	.92½	.97½	.90	.95	.90	.95
32-36 Gas Oil (zero)	.02¾	.03⅛	.02⅝	.02¾	.02⅝	.02¾
32-36 Gas Oil (industrial)	.02½	.02⅝	.02½	.02⅝	.02½	.02⅝
36-38 Distillate	.03¼	.03⅜	.03¼	.03⅜	.03¼	.03⅜
38-40 Straw Distillate	.03½	.03¾	.03⅜	.03⅝	.03⅜	.03⅝

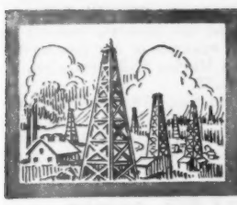
*Louisiana, Arkansas, Mississippi and East Texas delivery.

LUBRICATING OIL AND WAX

OKLAHOMA (Group 3)—	Sept. 3		Aug. 27		Aug. 20	
100 vis., 2 color, 20-25 cold test	.06¾	.07	.06¾	.07	.06¾	.07
100 vis., 3 color, 20-25 cold test	.05¾	.06	.05¾	.06	.05¾	.06
150 vis., 3 color, 20-25 cold test	.07¾	.08	.07¾	.08	.07¾	.08
150 vis., 4 color, 20-25 cold test	.07¼	.07½	.07¼	.07½	.07¼	.07½
180 vis., 3 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
180 vis., 5 color, 23-28 cold test	.08½	.08¾	.08½	.08¾	.08½	.08¾
200 vis., 3 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
200 vis., 4 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
200 vis., 5 color, 23-28 cold test	.08¾	.09	.08¾	.09	.08¾	.09
240 vis., 3 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 4 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
240 vis., 5 color, 25-30 cold test	.11¾	.12	.11¾	.12	.11¾	.12
280 vis., 3 color, 25-30 cold test	.15¾	.16	.15¾	.16	.15¾	.16
280 vis., 4 color, 25-30 cold test	.14¾	.15	.14¾	.15	.14¾	.15
280 vis., 5 color, 25-30 cold test	.13¾	.14	.13¾	.14	.13¾	.14
Cylinder Stocks:						
600, steam refined, light green	.12	.14	.12	.14	.12	.14
600, steam refined, dark green	.11	.13	.11	.13	.11	.13
190-200 vis., D color Bright Stock	.40	.41	.40	.41	.40	
150-160 vis., D color Bright Stock	.36	.37	.36	.37	.35	.36
150-160 vis., E color Bright Stock	.30	.33	.30	.33	.33	
Waxes:						
124-126 White Crude Scale Wax	.02¾		.02⅝	.02¾	.02⅝	.02¾
PENSNYLVANIA—						
34 Neutral	.07½	.07¾	.07½	.07⅝	.07½	.07¾
34 Sundebloom	.07½	.07¾	.07½	.07⅝	.07½	.07¾
36 Miners' Neutral	.07¼	.07½	.07¼	.07½	.07¼	.07½
150, 3 color	.18½	.19	.18½	.19	.18½	.19
180, 3 color	.23	.23½	.23	.23½	.25	.25½
200, 3 color	.25½	.26	.25	.25½	.25	.25½
220, 3 color	.28½	.29	.28½	.29	.28½	.29
600, steam refined	.23	.23½	.23	.23½	.23	.23½
635, steam refined	.26	.28½	.25½	.26	.25½	.26
650, steam refined	.29	.29½	.28½	.29	.28½	.29
600, Pennsylvania Flash	.30½	.31	.30	.30½	.30	.30½
630, Pennsylvania Flash	.35	.37½	.35	.35½	.35	.35½
600, E filtered	.32½	.33½	.32	.32½	.32	.32½
600, D filtered	.36	.37	.36	.37	.36	.37
Pennsylvania Bright Stock	.51	.51½	.51	.51½	.51	.51½
*122-124 White Crude Scale Wax	.02¾	.03	.02¾	.03	.02¾	.03
*124-126 White Crude Scale Wax	.03	.03⅛	.03	.03⅛	.03	.03⅛

*At New York.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.05¾	.06½	.05¾	.06½	.05¾	.06½
No. 3 color, 200 vis., pale oil	.09	.09½	.09	.09½	.09	.09½
No. 3 color, 300 vis., pale oil	.09¾	.10¼	.09¾	.10¼	.09¾	.10¼
No. 3½ color, 500 vis., pale oil	.11½	.12	.11½	.12	.11½	.12
No. 4 color, 750 vis., pale oil	.12½	.13	.12½	.13	.12½	.13
No. 5 to 6 color, 200 vis., red oil	.08	.08½	.08	.08½	.08	.08½
No. 5 to 6 color, 300 vis., red oil	.08¾	.09¼	.08¾	.09¼	.08¾	.09¼
No. 5 to 6 color, 500 vis., red oil	.09½	.10	.09½	.10	.09½	.10



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

No. 5 to 6 color, 750 vis., red oil	.11¾	.12¼	.11¾	.12¼	.11¾	.12¼
No. 2½ color, 200 vis., pale filtered	.11	.12	.11	.12	.11	.12
No. 2½ color, 300 vis., pale filtered	.12	.13	.12	.13	.12	.13
No. 2½ color, 500 vis., pale filtered	.14½	.15	.14½	.15	.14½	.15
No. 2½-3 color, 750 vis., pale filtered	.17	.19	.17	.19	.17	.19
CALIFORNIA—						
130 vis., 2½-3 color	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 2½-3 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
300 vis., 3-3½ color	.13	.13½	.13	.13½	.13	.13½
350 vis., 3½-4 color	.13½	.13¾	.13½	.13¾	.13½	.13¾
400 vis., 3½-4 color	.15	.15½	.15	.15½	.15	.15½
Red Neutral:						
200 vis., 4½-5 color	.11	.11¼	.11	.11¼	.11	.11¼
300 vis., 5-6 color	.12	.12¼	.12	.12¼	.12	.12¼
400 vis., 5-6 color	.13¼	.14	.13¼	.14	.13¼	.14
500 vis., 4½-5 color	.14¼	.15½	.14¼	.15½	.14¼	.15½
500 vis., 5-6½ color	.15	.15¼	.15	.15¼	.15	.15¼
600 vis., 6½ plus color	.16	.16¼	.16	.16¼	.16	.16¼

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Sept. 3	Aug. 27		Aug. 20	
Gasoline, U. S. Motor, 58-60, 437	.09	.09½	.10	.09½	.10
Kerosene, water white, 41-43	.08	.07¾	.08	.07¾	.08
*Fuel Oil, Bunker "C," 14-16, per bbl.	1.05	1.05		1.05	
†Fuel Oil, Diesel, 28-30, per bbl.	2.00	2.00		2.00	
Gas Oil, 32-36 gravity	.05¼	.05¼		.05¼	
25 pale Paraffin Oil	.10½	.10½		.10½	
28 pale Paraffin Oil	.07¼	.07¼		.07¼	
285 red Paraffin Oil	.11½	.11½		.11½	
250 red Paraffin Oil	.11	.11		.11	
225 red Paraffin Oil	.09½	.09½		.09½	
200 red Paraffin Oil	.09	.09		.09	
Refined Wax:					
120-122 a.m.p., per lb.	.03⅞	.03¾		.03½	
125-127 a.m.p., per lb.	.04⅛	.04		.039	
130-132 a.m.p., per lb.	.05⅞	.05¼		.05¼	
133-135 a.m.p., per lb.	.06	.05⅞		.05¾	
135-137 a.m.p., per lb.	.06⅛	.06		.05⅞	
Petrolatum in barrels, carload lots, per pound:					
Dark green	.019	.019		.019	
Amber	.03⅝	.03⅝		.03⅝	
Extra amber	.03⅞	.03⅞		.03⅞	
Cream	.06⅜	.06⅜		.06⅜	
Lily White	.07⅝	.07⅜		.07⅝	
Snow White	.08⅜	.08⅜		.08⅜	

*Lighterage 5.0 cents a barrel extra. †Lighterage 6.5 cents a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Sept. 3	Aug. 27	Aug. 20
Kerosene, prime white	.08	.08	.08
Kerosene, water white	.09	.09	.09
600, steam refined cylinder stocks, in bbls.	.29½	.31½	.32
635, steam refined	.32½	.33½	.34
650, steam refined	.36½	.37½	.38
600, Pennsylvania Flash	.42½	.43	.44
630, Pennsylvania Flash	.46½	.47	.48
600, Warren E	.40	.40	.41
600, Oil City E	.39	.39	.40
Light 140-150 Bright Stocks	.60	.60	.61
Dark 140-150 Bright Stocks	.58	.58	.59

LOS ANGELES EXPORT PRICES

	Sept. 3		Aug. 27		Aug. 20	
Kerosene, water white	.05	.05½	.05	.05½	.05	.05½
U. S .Motor Gasoline, 53-55 437 e.p.	.07	.07½	.07	.07½	.07	.07½

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Corsicana heavy (January 11)* ..... .80
Other fields .....See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

WEST TEXAS

Iatan* .....Same as North Texas
Crane-Upton-Crockett, Pecos, Winkler, Mitchell, and Glasscock (See gravity table).
Chalk† ..... .65

*Includes Howard County and Westbrook Fields.
†Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover, below 24 gravity (May 20, 1929) ..... $ .85
Smackover, 24 gravity and above (May 20, 1929) 1.00
Cotton Valley (Below 36 gravity May 22) ..... .85
Bellevue (May 29, 1929) 1.30
Urania (May 21, 1929) 1.10
East El Dorado (May 22, 1929) ..... .85
Other fields.....See gravity table

Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Smackover, Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana, and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co.

GULF COAST

Grade A (May 20)* $1.30
Grade B .....See gravity table
Jennings, La. (March 14)† 1.05
Saratoga, Batson, Dayton (March 14, 1927)‡ 1.20
Markham (March 14)§ 1.00
High Island (December 14)¶ 1.00

*Humble Oil & Refining Co., The Texas Company, Gulf Pipe Line Co., and Sun Pipe Line Co. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §The Texas Company. ¶Posted by Gulf Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.
(Effective May 21, 1929)

Rock Creek, Wyo. $1.40
Salt Creek .....See gravity table
Big Muddy 1.43
Grass Creek, heavy (July 27, 1928) ... .90
Grass Creek, light 1.65
Mule Creek 1.20
Elk Basin 1.65
Lance Creek 1.68
Poison Spider (March 14, 1927) 1.00
Notches (March 14, 1927) ..... .65
Rex Lake (February 22) 1.10
Osage 1.65
Lost Soldier (contract, May 22) 1.05
Hamilton Dome (March 14, 1927) ..... .85
Pedro 1.25
Greybull 1.65
Four Bear ..... .85
Cat Creek (Montana) (July 27, 1928).. 1.48
Sunburst (Montana) (May 23, 1929) ... 1.75
Torchlight 1.65
Hogback (New Mexico) 1.70

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Re-

(Continued on Page 142)

CRUDE OIL GRAVITY TABLE

Gravity—	1 Okla., Kans. N. C. Texas	2 No. La and Arkansas	3 Crane, Upton, Crockett, Winkler, Howard, Pecos, Texas crudes, and Lea, N. Mex.	4 Stephens, Ark.	5 Wheeler (Texas Panhandle)	6 Gray County (Texas Panhandle)	7 Carson and Hutchinson (Texas Panhandle)	8 Salt Creek, Wyo.	9 Grade B and Light Crude (G. Coast)	10 Somerset (South Central Texas)
24 and above	....	....	....	....	....	....	....	....	....	....
Below 24	....	....	....	....	....	....	....	....	....	....
Below 25	.85	....	.70	....	....	....	....	....	1.15	....
25 to 25.9	.90	....	.74	....	....	....	....	....	1.18	....
26 to 26.9	.95	....	.78	....	....	....	....	....	1.21	....
27 to 27.9	1.00	....	.82	....	....	....	....	....	1.24	....
Below 28	....	1.00	....	.90	.90	.90	.90	....	....	....
28 to 28.9	1.05	1.05	.86	.94	.90	.90	.90	....	1.27	....
29 to 29.9	1.10	1.10	.90	.98	.90	.95	.90	1.10	1.30	....
30 to 30.9	1.15	1.15	.95	1.02	.95	1.00	.90	1.15	1.33	....
31 to 31.9	1.20	1.20	.98	1.06	1.00	1.05	.90	1.20	1.36	....
32 to 32.9	1.25	1.25	1.02	1.10	1.05	1.10	.95	1.25	1.39	1.05
33 to 33.9	1.30	1.30	1.06	....	1.10	1.15	1.00	1.30	1.42	1.07
34 to 34.9	1.35	1.35	1.10	....	1.15	1.20	1.05	1.35	1.45	1.09
35 to 35.9	1.40	1.40	1.14	....	1.20	1.25	1.10	1.40	1.48	1.11
36 to 36.9	1.45	1.45	1.18	....	1.25	1.30	1.15	1.45	....	1.13
37 to 37.9	1.50	1.50	....	....	1.30	1.35	1.20	1.50	....	1.15
38 to 38.9	1.55	1.55	....	....	1.35	1.40	1.25	....	....	1.17
39 to 39.9	1.60	1.60	....	....	1.40	1.45	1.30	....	....	....
40 to 40.9	1.65	1.65	....	....	1.45	1.50	1.35	....	....	....
41 to 41.9	1.70	1.70	....	....	1.50	1.55	1.40	....	....	....
42 to 42.9	1.75	1.75	....	....	1.55	1.60	1.45	....	....	....
43 to 43.9	1.80	1.80	....	....	1.60	1.65	1.50	....	....	....
44 and above	1.85	1.85	....	....	1.65	1.70	1.55	....	....	....

Column 1, Note—Magnolia Petroleum Co. posted schedule May 30, 1929, making price below 26 gravity 70 cents per barrel, 26-26.9 gravity 75 cents, 27-27.9 gravity 85 cents, 28-28.9 gravity 90 cents, 29-29.9 gravity 95 cents, 30-30.9 gravity $1.05, and 31-31.9 gravity $1.15, with balance of the price schedule as shown above.

Oklahoma—Carter Oil Co., Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., The Texas Company, May 20.

North Central Texas—Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Nocona and Moran, Prairie Oil & Gas Co., Sinclair Oil Refining Co., Humble Oil & Refining Co., The Texas Company and Gulf Refining Co., May 20

Kansas—Prairie, Sinclair, The Texas Company and Carter, May 20.

Column 2—Arkansas and North Louisiana—(Caddo, Bull Bayou, Crichton, Cotton Valley, above 36 gravity, DeSoto, Haynesville, Homer and El Dorado only) May 22, Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Gulf Refining Co., Magnolia Petroleum Co., schedule applies to Pine Island, Haynesville, Bull Bayou, Louisiana and El Dorado, Ark., light crude.

Column 3—Humble Oil & Refining Co. and Magnolia Petroleum Co., May 20.

Column 4—Atlantic Oil Producing Co., Prairie Oil & Gas Co., Louisiana Oil Refining Corp., May 21, 1929.

Columns 5, 6 and 7—Humble Oil & Refining Co., Magnolia Petroleum Co., May 20, 1929.

Column 8—Midwest Refining Co., May 20, 1929. All crude over 37 gravity $1.50 per barrel.

Column 9—Humble Oil & Refining Co., May 20, 1929, (schedule ends 35 and above.)

Column 10—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co.-Union Oil Co. (Effective January 18, 1929

Gravity—	1 Salt Lake, Potrero, Newport, Long Beach, Summerland, Lawndale, Los Angeles, Fullerton, Richfield, Torrance, Olinda-Brea, Alamitos Heights, Signal Hill, Seal Beach, Huntington Beach, Athens, Inglewood, Rosecrans-Dominguez, Watsonville	2 Whittier, La Habra, Coyote Hills	3 Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills	4 Montebello	5 Santa Fe Springs	6 Santa Maria Coalinga	7 Wheeler Ridge Fruitvale	8 Orcutt Ventura, Rincon	9 Ventura Ave.	10 Elwood Terrace
14 to 14.9	.70	.70	.50	.70	....	.50	.50	.65	.70	....
15 to 15.9	.70	.70	.50	.70	....	.50	.50	.65	.70	....
16 to 16.9	.70	.70	.50	.70	....	.50	.50	.65	.70	....
17 to 17.9	.70	.70	.50	.70	....	.50	.50	.65	.70	....
18 to 18.9	.75	.75	.56	.70	....	.56	.56	.70	.75	....
19 to 19.9	.80	.80	.62	.75	....	.62	.62	.70	.80	....
20 to 20.9	.85	.84	.68	.80	....	.68	.68	.70	.85	....
21 to 21.9	.89	.88	.74	.85	.89	.74	.74	.86	.86	....
22 to 22.9	.93	.91	.80	.90	.92	.80	.80	.87	.87	....
23 to 23.9	.97	.94	.85	.95	.95	.85	.85	.90	.90	....
24 to 24.9	1.01	.97	.90	.98	.98	.88	.88	.94	.94	....
25 to 25.9	1.05	1.00	.95	1.01	1.01	.91	.91	.98	.98	....
26 to 26.9	1.09	1.04	1.00	1.04	1.04	.94	.94	1.02	1.02	....
27 to 27.9	1.13	1.08	1.05	1.07	1.07	.98	.97	....	1.06	....
28 to 28.9	1.17	1.12	1.10	1.10	1.10	1.02	....	....	1.10	....
29 to 29.9	1.21	1.16	1.16	1.13	1.15	1.06	....	....	1.14	....
30 to 30.9	1.25	1.20	1.22	1.16	1.20	1.10	....	....	1.18	....
31 to 31.9	1.30	....	1.28	....	1.25	1.14	....	....	1.23	....
32 to 32.9	1.35	....	1.34	....	1.30	1.18	....	....	1.28	....
33 to 33.9	1.41	....	1.40	....	1.35	1.22	....	....	1.34	....
34 to 34.9	1.47	....	1.46	....	1.40	1.26	....	....	1.40	1.16
35 to 35.9	1.53	....	....	....	1.45	1.30	....	....	1.46	1.22
36 to 36.9	1.59	....	....	....	1.50	....	....	....	1.52	1.28
37 to 37.9	1.65	....	....	....	1.55	....	....	....	1.58	1.34
38 to 38.9	1.71	....	....	....	1.60	....	....	....	1.64	1.40
39 to 39.9	1.77	....	....	....	1.65	....	....	....	1.70	1.46
40 to 40.9	1.83	....	....	....	....	....	....	....	1.76	1.52
41 to 41.9	1.89	....	....	....	....	....	....	....	1.82	1.58
42 to 42.9	1.95	....	....	....	....	....	....	....	1.88	1.64

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain 11 to 13.9 gravity 45 cents, 14 gravity and above 50 cents, effective October 2, 1929. On December 1, 1928, the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 45 cents, 14 gravity and above 50 cents.

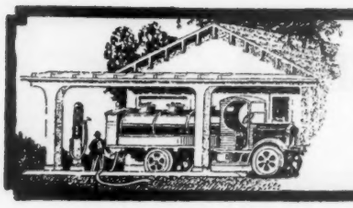
Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity; Dominguez and Athens-Rosecrans, 24 to 42.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 45 cents.

Column 6—Oil below 14 gravity posted at 45 cents.

Columns 8 and 9—Posted by Union Oil Co. only.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Sept. 3.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago dist.†..	19.0	20.0	3.0	13.0
Decatur, Ill. ...	19.2	20.2	3.0	13.1
E. St. Louis ...	18.4	17.4	3.0	12.2
Joliet	19.4	20.4	3.0	13.3
Peoria	19.2	20.2	3.0	13.1
Quincy	19.2	20.2	3.0	12.9
Davenport, Ia..	19.5	20.5	3.0	13.2
Des Moines ...	19.5	20.5	3.0	13.3
Keokuk	19.5	20.5	3.0	13.3
Sioux City	19.1	20.1	3.0	12.9
Duluth, Minn..	20.5	21.5	3.0	13.9
Mankato	20.1	21.1	3.0	13.7
Minneapolis ...	20.2	21.2	3.0	13.9
LaCrosse, Wis..	19.2	20.2	2.0	14.0
Milwaukee	18.1	19.1	2.0	12.9
Madison	17.3	18.3	2.0	13.1
Detroit, Mich...	19.8	20.8	3.0	14.7
Grand Rapids..	19.7	20.7	3.0	14.6
Saginaw	19.9	20.9	3.0	14.8
Evansville, Ind.	20.0	21.0	4.0	14.0
Fort Wayne ...	20.4	21.4	4.0	14.4
Indianapolis ..	20.2	21.2	4.0	14.2
South Bend ...	20.4	21.4	4.0	14.4
Fargo, N. D. ..	21.9	22.9	3.0	15.9
Huron, S. D. ..	21.3	22.3	4.0	14.7
Sioux Falls	20.1	21.1	4.0	14.4
K. C., Mo.* ...	18.9	19.9	3.0	11.6
Springfield* ...	18.8	19.8	3.0	12.5
St. Louis*	17.9	18.9	2.5	12.9
St. Joseph	18.5	19.5	2.0	12.0
Wichita, Kans..	17.8	18.8	3.0	11.8
Bartlesville, Ok.	18.5	19.5	4.0	11.5

*State tax 2 cents; remainder city tax.
†Effective February 20, discounts on Q.D.A. in Chicago district 2 cents off service station price on purchases of 500 gallons or more per month and 4 cents on purchases of 1,000 gallons or more per month.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	15.7	12.9
V. M. & P. Naphtha	17.2	13.9
Cleaner's naphtha	17.0	14.9
Stanisol	18.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 799 gallons	8.0
800 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline; 2,000 gallons or less, 2 cents; more than 2,000 and less than 4,000 gallons, 2½ cents; more than 4,000 gallons, 3 cents. Discounts are allowed each month, and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex. ...	17.0	21.0	4.0	12.0
Fort Worth ...	17.0	20.0	4.0	12.0
Houston	17.0	21.0	4.0	11.0
San Antonio ...	17.0	21.0	4.0	11.0
El Paso	16.0	19.0	4.0	16.0
Texarkana	17.0	19.0	4.0	12.0
Muskogee, Ok.*	17.0	20.0	4.0	13.0
Okla. City* ...	17.0	20.0	4.0	10.0
Tulsa*	15.0	19.0	4.0	10.0
Ft. Smith, Ark.	15.0	17.0	5.0	12.0
Little Rock ...	19.0	23.0	5.0	13.0

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo...	18.0	21.0	4.0	15.5
Pueblo	18.0	21.0	4.0	15.5
Grand Junction	22.5	25.5	4.0	19.0
Casper, Wyo. ..	21.0	24.0	4.0	14.0
Cheyenne	22.0	25.0	4.0	15.5
Butte, Mont. ..	25.5	28.5	5.0	20.0
Helena	25.5	28.5	5.0	20.0
Salt Lake, Utah	22.0	25.0	3.5	17.0
Albu'que, N. M.	21.0	24.0	5.0	17.0
Boise, Idaho ..	24.5	27.5	4.0	19.0
Twin Falls	24.5	28.5	4.0	19.0

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa..	17.0	*23.0	...	14.0
Philadelphia ..	17.0	*23.0	...	14.0
Scranton	17.0	*23.0	...	14.0
Allentown	17.0	*23.0	...	14.0
Altoona	17.0	*23.0	...	14.0
Erie	14.0	*19.0	...	14.0
Dover, Del. ...	20.0	22.0	2.0	14.0
Wilmington ...	20.0	22.0	2.0	14.0
Springf'd, Mass.	18.0	20.0	2.0	15.0
Worcester	17.0	18.0	2.0	15.0
Boston	18.0	20.0	2.0	15.0
Providence, R.I.	16.0	17.0	2.0	15.0
Hartford, Conn.	18.0	20.0	2.0	14.0
New Haven ...	18.0	20.0	2.0	15.0

*Includes tax of 4.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y...	18.0	20.0	3.0	15.0
New York* ...	16.0	18.0	2.0	15.0
Buffalo	18.0	20.0	3.0	14.0
Rochester	18.0	20.0	3.0	14.0
Syracuse	18.0	20.0	3.0	15.0
Boston, Mass...	18.0	20.0	3.0	15.0
Augusta, Me....	20.0	22.0	4.0	15.0
Manch't'r, N.H.	20.0	22.0	4.0	15.0
Burlington, Vt..	19.0	20.0	4.0	15.0

*Prices in steel barrels.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga. ...	20.0	22.0	4.0	16.5
Augusta	18.0	20.0	4.0	15.5
Macon	21.0	23.0	4.0	16.5
Savannah	20.0	22.0	4.0	15.5
Birm'ham, Ala..	20.0	22.0	4.0	15.0
Mobile	20.0	22.0	4.0	15.0
Montgomery ...	21.0	23.0	4.0	16.5
Clarks'le, Miss..	20.0	22.0	5.0	12.5
Jackson	21.0	23.0	5.0	13.0
Natchez	20.5	23.5	5.0	14.0
Gulfport	22.5	24.5	5.0	14.0
Vicksburg	20.5	22.5	5.0	14.0
Jack'ville, Fla..	22.0	24.0	6.0	14.5
Miami	23.0	25.0	6.0	15.5
Pensacola	23.0	25.0	6.0	14.5
Tampa	22.0	24.0	5.0	14.5
Lexington, Ky..	20.0	22.0	5.0	15.5
Covington	21.0	23.0	5.0	15.5
Louisville	21.0	23.0	5.0	15.0
Ashland	18.0	19.0	5.0	15.5
Catlettsburg ..	18.0	19.0	5.0	15.5

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline. Pensacola and Mobile taxes include 1-cent city levy. Gulfport tax includes privilege tax of 2 cents in addition to state tax.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
San Francisco.	20.0	24.0	3.0	15.5
Los Angeles ..	19.5	23.5	3.0	15.5
Reno, Nev.	24.0	26.0	4.0	19.0
Portland, Ore ..	20.5	24.5	3.0	16.5
Seattle, Wash..	19.5	23.5	3.0	16.5
Tacoma	19.5	23.5	3.0	16.5
Spokane	23.5	27.5	3.0	20.5
Phoenix, Ariz...	18.0	22.0	4.0	20.5

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	20.25	22.25	4.0	13.25
McCook	21.75	23.75	4.0	14.75
Norfolk	20.75	22.75	4.0	13.75
N. Platte	21.75	23.75	4.0	14.50
Scottsbluff	21.75	23.75	4.0	14.25

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlantic City ..	14.0	18.0	2.0	13.0
Newark, N. J...	16.0	20.0	2.0	13.0
Annapolis, Md..	18.0	22.0	4.0	13.0
Baltimore	18.0	22.0	4.0	12.0
Cumberland ...	18.0	22.0	4.0	13.0
Washington ...	16.0	20.0	2.0	12.0
Danville, Va. ..	19.0	23.0	5.0	12.0
Norfolk	19.0	23.0	5.0	13.0
Petersburg	19.0	23.0	5.0	13.0
Roanoke	18.0	21.0	5.0	13.0
Richmond	19.0	23.0	5.0	13.0
Charles'n, W.Va.	18.0	22.0	4.0	13.0
Keyser	18.0	22.0	4.0	13.0
Parkersburg ...	18.0	22.0	4.0	13.0
Wheeling	18.0	22.0	4.0	13.0
Charlotte, N. C.	19.0	23.0	5.0	13.0
Hickory	19.0	23.0	5.0	13.0
Mt. Airy	19.0	23.0	5.0	13.0
Salisbury	17.0	20.0	5.0	13.0
Charleston, S.C.	20.0	24.0	6.0	13.0
Columbia	20.0	24.0	6.0	13.0

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points* ..	19.0	20.0	4.0	†13.0

*Dealers and commercial accounts 2 cents under tank wagon.
†Service station price 15 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.*	16.5	20.5	5.0	16.0
Baton Rouge ..	16.0	20.0	4.0	14.5
Alexandria† ...	18.0	22.0	5.0	16.0
Lafayette†	18.0	22.0	5.0	14.0
Lake Charles†..	18.5	22.5	5.0	16.0
Shreveport	17.5	21.5	4.0	15.0
Knoxv'le, Tenn.	18.0	22.0	5.0	16.0
Memphis	18.0	22.0	5.0	12.5
Chattanooga ..	16.0	20.0	5.0	16.0
Nashville	19.0	23.0	5.0	16.0
Bristol	19.0	23.0	5.0	14.0
Lt. Rock, Ark..	19.0	23.0	5.0	13.0

*Tax of 5 cents includes city tax of 1 cent. Louisiana Kerosene prices include 1-cent state tax and 1-cent parish tax.
†Includes 1-cent parish tax.

TANK WAGON CHANGES

August 24—Standard Oil Co. of Louisiana reduced the gasoline tank wagon and station prices 2 cents in Knoxville, Tenn., to 18 cents and 22 cents.

Standard Oil Co. of Kentucky reduced the gasoline tank wagon and station prices 2 cents in Augusta, Ga., to 18 cents and 20 cents.

August 30—Standard Oil Co. of New York reduced the gasoline tank wagon and station prices 3 cents in metropolitan New York to 16 cents and 18 cents.

TIDE WATER PIPE LINE TO ANNOUNCE PRICES

The Tide Water Pipe Line Co. in the future will announce the prices it will pay for Bradford and Allegany County crude oils, according to a statement by G. J. Hanks, general manager. This announcement will include the premium which the company has been paying for the past five years.

Mr. Hanks' announcement follows:

"This company will hereafter announce its price for Pennsylvania crude at the total sum it will pay at its producers' tanks rather than the base market price as it has heretofore announced. We have been paying a premium of 25 cents per barrel for five years and believe that it has become an integral part of the market structure.

"By announcing our price in the manner proposed it is believed the papers, both locally and nationally and also the oil trade journals will carry the quotation for Bradford and Allegany crudes at a figure which will correctly reflect the price paid for it. We will, however, continue to post the premium publicly in our office, an example of our posting today would be: Market $3.30, premium 25 cents; price $3.55.

"We feel quoting the crude as proposed will be beneficial to all interests. This letter is issued so that future crude price announcements may be clear to all of our patrons."

SHELL P. L. REPORT

Runs and shipments of the Shell Pipe Line Corp. for July were as follows: Runs, 3,934,988.40 bbls.; shipments, 3,457,174.61 bbls.; excess runs over shipments, 477,813.79 bbls.

TO SELL REFINERY

The refinery and other property of the Franklin Quality Refining Co. will be sold at a receiver's sale to be held September 27. The refinery consists of a complete lubricating oil plant with a capacity of 500 bbls. daily. It is located at Franklin, Pa.

In addition to the refinery property, and plant site the sale includes a filling station, several curb pumps and other marketing equipment.

CRUDE OIL PRICES

(Continued from Page 141)

fining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

Luling (May 2)*	$ .90
Mirando (May 20, 1929)†	.90
Salt Flat (May 20, 1929)‖	1.25
Rockdale-Minerva (April 15): ..	
Below 28 gravity	1.25
28-38.9 gravity	1.27
39-39.9 gravity	1.29
40 and above	1.31
Thrall‡	....
Callihan (May 15)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum Co.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.
‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight.
‖Humble Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective August 16, 1929)

Penna Grade Oil in New York Transit Lines (New York)	$3.30
Bradford District Oil in National Transit Lines (Pennsylvania)	3.30
Penna Grade Oil in National Transit Lines (Pennsylvania)	3.30
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	3.25
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	3.15
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.90
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (May 22, 1929)	1.75
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Line (May 22, 1929).	1.80
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (May 22, 1929).	1.90
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (May 22, 1929) ...	1.80
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Jan. 29) ...	.60

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective May 21, 1929)

Lima	$1.80
Wooster	1.90
Illinois	1.75
Indiana	1.57
Princeton	1.75
Plymouth	1.28
Waterloo (November 17, 1926)	1.35
Western Kentucky	1.83
Dundee, Mich. (June 26, 1929)‖	1.35
Upper and Lower Traverse sands, Mich.‖ ....Same as Mid-Continent gravity scale	
Midland, Mich. (June 3, 1929)*	1.70
Saginaw, Mich., Saginaw Sand (February 10)†	1.89
Saginaw, Mich., Berea Sand (February 10)†	1.79
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky, (March 15)‡	1.50
Oil in line in Stoll Oil Refining Co. in Oil City, Ky. (June 1, 1929)§	1.80
Oil Springs (Canada)¶	2.27
Petrolia (Canada)¶	2.20

*Poted by Pure Oil Co.
†Posted by Sun Oil Co.
‡Posted by Paragon Development Co.
§Posted by Stoll Oil Refining Co.
¶Posted by Imperial Oil Co., Ltd.
‖Posted by Standard of Indiana for boat shipment.

MEXICAN CRUDE

Panuco (May)*	$ .644

*Based on July transactions. Price exclusive of taxes.

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Substantial Gains in Net Earnings

Reports of 26 Companies Show Combined Gain Over First Six Months of Previous Year. New Bradford-Argo Merger

Substantial gains in net earnings by the oil industry this year are indicated by reports of 26 companies which show combined net earnings of $86,173,938 for the first half of 1928, a gain of 80 per cent over the $48,541,232 reported by the same companies for the first six months of 1928. The net earnings for the first six months this year are 66 per cent in excess of the combined net profit of $51,747,148 shown by the first group in the first half of 1927.

With the exception of one, all of the companies showed larger earnings for the first six months this year than in the comparable period of 1928. In several instances substantial earnings were shown during the first half of 1929, against deficits in the similar period last year.

Of the total of 26 companies, 23 report by quarters. In the first three months of 1929 these companies showed combined net profit of $21,872,282, a gain of more than 100 per cent over the $10,431,517 reported by the same group for the first quarter last year, and slightly ahead of the $21,630,989 earned in the first three months of 1927. During the June quarter this year these same companies showed aggregate net of $44,312,961, close to 65 per cent in excess of the $26,787,297 reported in the corresponding quarter of 1928 and more than 120 per cent ahead of the combined net earnings of the same group in the second quarter two years ago.

Outstanding gains were shown by Atlantic Refining, Sinclair Consolidated, Shell Union Oil, and several others.

Improvement in the earnings of oil companies this year has been more general than in recent years. A number of the smaller companies have recorded material gains in profits, due in large measure to the mark-up in crude prices early in the year, as well as a favorable gasoline market during the spring and early summer months.

South Penn Oil

South Penn Oil Co. declared the regular quarterly dividend of 50 cents, payable September 30 to stock of record September 14.

South Penn Oil Co. earnings for the current years are expected, it is reported from Pittsburgh, to exceed those of 1928. Net profit for the first half of 1929 is understood to have been about $2,900,000 after taxes, depreciation and depletion, comparing with profit of $3,911,165 for the full year 1928, which was equivalent to $4,89 a share on the 800,000 shares of $25 par stock then outstanding.

With payment of the 50 per cent stock dividend on January 31 this year the outstanding stock was increased to 1,200,000 shares. Estimated profit for the first six months would be equal to approximately $2.40 a share on the increased stock.

Since the end of June the company has made four revisions in the prices of Pennsylvania crude oil, amounting in the aggregate to a reduction of 80 cents a barrel, the top price at present being $3.30 a barrel. These cuts, in addition to any future changes that may be made, will have their effect on earnings for the latter six months of the year. The company is the largest producer and purchaser of Pennsylvania grade oil, producing about 8,200 bbls. daily at present.

Standard of Indiana

Standard Oil Co. of Indiana has formally filed with Secretary of State of Indiana notice of increase in authorized $25 par capital stock to 18,000,000 shares from 15,000,000. The increase was recently approved by stockholders, the additional stock to be used in exchange for Pan American Petroleum & Transport Co. common and common B, in the ratio of seven shares of the former for six of the latter. The latter proposal was also ratified by stockholders. There were 8,914,369 shares voted in favor of the proposals, or 64 per cent of the outstanding stock.

The offer for the Pan American stock expires November 30. At the time of the offer, Standard Oil of Indiana held approximately 15 per cent of the outstanding $50-par stock of Pan American, including direct control of the majority of the voting common stock. Latest available figures show 1,001,694 shares of common and 2,422,101 shares of common B of Pan American outstanding, total of 3,423,795 shares.

Barnsdall Corporation

Barnsdall Corp. and subsidiaries report for seven months ended July 31, 1929, net profit of $4,807,477 after interest, depreciation, depletion, abandoned dry holes and Federal taxes, equivalent to $2.14 a share (par $25) earned on 2,247,425 shares of stock. July net profit was $692,224, after above charges.

Italo Petroleum-McKeon Oil

At adjourned meeting of stockholders of Italo Petroleum Corp., 447,186 shares of preferred out of 597,957 outstanding and 646,344 shares of common out of 948,596 outstanding, voted in favor of a plan to sell the company's assets to McKeon Oil Co. Opposing vote was 4,858 shares of preferred and 6,416 shares of common. Directors expect to close the transaction immediately unless minority litigation should interpose.

Standard Oil of Kentucky

Standard Oil of Kentucky declared regular quarterly dividend of 40 cents, payable September 30, to stock of record September 16.

Honolulu Oil

Honolulu Consolidated Oil Co. declared regular quarterly dividend of 50 cents, payable September 14, to stock of record September 5.

Pure Oil

Pure Oil Co. declared regular quarterly dividends of $1.25 on 5¼ per cent preferred, $1.50 on 6 per cent preferred and $2 on 8 per cent preferred, all payable October 1 to stock of record September 10.

North Central Texas Oil

North Central Texas Oil Co., Inc., reports for quarter ended June 30, 1929, net profit of $95,713 after depletion, leases, writeoffs and Federal taxes, comparing with $76,015 in the preceding quarter and $50,621 in June quarter of 1928.

Net profit for first half of 1929, totaled $171,728 after above charges against $94,600 in first half of previous year. Capital stock consists of $1,000,000 6½ per cent preferred and 270,000 no-par shares of common.

Holly Oil

Holly Oil Co. reports for the year ended June 30, 1929, profit of $119,029 after depreciation and depletion, against $88,611 on the same basis for the preceding fiscal year. Crude oil sales, less royalty, were $329,157 against $274,614 for the year ended June 30, 1928.

Transcontinental Oil

Balance sheet of Transcontinental Oil Co. as of July 31, adjusted to give effect to consummation of the plan for retiring the preferred stock, shows cash in excess of $7,000,000, total current assets of $10,698,226 and total current liabilities exceeding 13.6 for one.

Of the 157,500 shares of 7 per cent preferred stock which the company previously had outstanding, all but 280 shares were deposited under the plan for retiring this issue. Out of 157,220 preferred shares retired, 130 shares were retired under Option A, calling for payment of $135 a share, while 157,090 preferred shares were retired under Option B, calling for payment of $90 in cash and five shares of common stock for each preferred share.

Total outstanding common stock, giving effect to the issue of one new share to each two shares held, is now 6,544,169 shares of no-par value.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Saturday, was as follows:

March 22	58.52	June 14	57.76
March 30	58.57	June 21	56.76
April 6	58.26	June 28	56.70
April 13	58.52	July 5	56.52
April 20	58.46	July 12	55.69
April 27	58.34	July 19	56.83
May 4	58.14	July 26	55.62
May 11	59.75	Aug. 3	55.09
May 18	59.30	Aug. 10	54.15
May 25	57.73	Aug. 17	60.32
June 1	56.45	Aug. 24	60.61
June 8	58.37	Aug. 31	60.90

New Bradford Oil

Directors of the New Bradford Oil Co. have called a special stockholders' meeting for September 30 to vote on a proposal to acquire approximately 80 per cent of the outstanding stock of the Argo Oil Co. at $3 per share. Offer provides for the purchase of approximately 145,000 shares for cash and the remainder, approximately 387,000 shares, to be paid for in New Bradford stock at par. Argo had outstanding on December 31, 1928, 683,971 shares, par $10, and New Bradford on the same date had 1,095,291 shares, par $5, outstanding. Stock to be acquired represents former holdings of the Midwest Refining Co. in Argo Oil Co.

New Bradford in acquiring properties

INDEPENDENT OILS ON NEW YORK CURB

Compiled by Francis, Bro. & Co., Kennedy Building, Tulsa, Okla.

1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low	Par value	Stocks	For week ended August 30 Sales	Open	High	Low	Last	Change
$6.75	.45	2 1/16	.55	1½	.53	.72	⅜	$5	Amer. Con. Oilfields	8,400	⅜	⅜	¼	⅜	....
..	..	7½	2¾	9½	3½	8⅝	3½	N.P.	Amer. Maracaibo	3,500	4	4	3⅝	3⅞	— ⅛
..	..	2¾	1	4½	2¼	5	1⅞	$10	Argo Oil	400	2⅝	2⅝	2	2	— ½
85¼	60	40	20½	55	32¾	62	45	N.P.	British American	500	63	67½	63	65½	....
28⅜	9¼	28¼	15½	4½	3⅞	4⅞	2⅝	25c	Carib. Syndicate (new)	2,600	3⅛	3⅜	3	3	....
..	..	58¾	40¼	90⅞	54	47	28½	$20	Cities Service	2,300	⅞	⅞	¾	⅞	+ ⅛
..	..	95⅝	87	103½	94½	98¾	93½	100	Cities Service, pfd.	300	5⅝	5¾	5⅝	5⅝	....
..	..	8⅞	7⅜	9⅝	8⅞	9¼	9	10	Cities Service, pfd. B	7,300	9¼	9½	8⅞	9¼	+ ¼
3½	1¾	3⅞	1⅛	3¼	.76	2	⅞	1	Colombia Syndicate	No sales.					
..	..	9¾	6⅜	8⅞	6¼	11⅛	6⅞	10	Consolidated Royalty	400	13	13	12¼	12¼	— 1
16	10	14⅞	9½	17½	9½	11¾	7⅞	N.P.	Creole Syndicate	1,200	7¼	7½	7	7⅛	— ⅛
..	..	3	.50	3¼	.76	2½	1⅛	N.P.	Crown Central	No sales.					
7⅞	6¾	12	4	33½	3¼	26	14	N.P.	Darby Petroleum	No sales.					
..	..	2½	74	2¼	1	11	2	N.P.	Derby Oil & Ref.	No sales.					
..	..	16¾	4	21⅛	7½	44	20⅞	N.P.	Derby Oil & Ref., pfd.	9,300	202⅞	206½	202	205¼	+ 1¼
..	..	2	.40	.53	.15	..	..	N.P.	Gilliland ctfs.	4,000	1½	1½	1⅛	1⅛	....
98	92	118	86¼	165	101⅛	202⅞	142⅛	$25	Gulf Oil Corp.	300	2⅛	2⅛	2⅛	2⅛	— ¼
$3.00	.83	2½	.80	3⅜	1	2⅞	1¼	5	Intercontinental Pet.	4,000	4¼	4½	3	4	— ½
..	..	2¼	1⅛	3	1¼	3⅝	1⅜	N.P.	Kirby Petroleum	800	35	35	33¾	33¾	— 1¼
12¼	5¾	10⅞	5⅛	9⅜	5⅛	6⅛	2⅞	25	Leonard Oil & Dev.	7,100	43	50	43	48½	+ 5¼
27	20	27½	20	43⅞	20	38⅞	23⅛	N.P.	Lion Oil & Ref. Co.	3,100	1/16	⅞	½	½	— ¼
46	30	59⅜	37	69⅛	48½	40	32¼	$25	Lone Star Gas	No sales.					
2⅞	1	2⅞	.80	1⅞	.50	1¼	⅜	1	Magdalena Syndicate	No sales.					
34	12½	52	12	48½	32	38½	20	N.P.	Margay Oil	No sales.					
8	5½	12⅛	5	8	2¾	6⅜	3⅜	N.P.	Mexico-Ohio Oil	200	⅞	⅞	⅞	⅞	....
1¾	1⅛	1½	1	1¾	.76	1½	⅞	$1	Mountain & Gulf	3,100	12¾	13⅜	12½	13¼	+ ½
26	23	29¼	22¾	28⅞	19½	22⅞	12	10	Mountain Producers	1,100	3⅝	3⅝	3⅛	3½	— ¼
6⅝	5	5⅞	4⅝	5⅝	4¼	5	3⅜	5	New Bradford	300	6⅞	6⅞	5⅞	5⅞	— 1⅛
..	..	16	9¼	11⅞	7⅛	9⅜	5½	1	New Mex. & Ariz.	400	14½	14⅝	14¼	14¼	— ⅜
..	..	12¾	9½	14¼	8½	11⅞	3¾	N.P.	North Central Texas	7,300	1¼	1¼	1	1⅛	— ¼
10⅛	5⅞	9⅝	3¼	6	2⅛	3½	1⅜	N.P.	Pandem	2,200	5½	6	5½	5¾	— ⅛
12¼	11¾	12⅛	7	15⅝	8½	10¼	5⅞	N.P.	Pantepec Oil	No sales.					
22¾	12	13½	5⅛	7¾	4⅞	7⅜	4⅜	N.P.	Pennok Oil	No sales.					
17	8½	24⅜	7	18	4⅞	16	11½	25	Red Bank Oil	100	4⅝	4⅞	4⅝	4⅞	....
30¼	12	15½	3½	12⅞	4⅛	8½	4½	N.P.	Reiter-Foster	1,200	4⅞	5	4⅝	5	....
7	4½	7	4½	12	4⅛	11	6	N.P.	Ryan Consolidated	800	5⅝	5⅝	5¼	5½	....
10	7⅛	8	5¼	7¼	5½	5⅞	2⅝	$10	Salt Creek Cons.	400	2⅝	2⅝	2½	2½	— ⅛
35	24⅛	35½	27¼	35	23⅛	25⅞	14⅝	10	Salt Creek Prod.	2,500	14⅞	15½	14⅞	15⅜	+ ⅝
6⅞	1¼	7	1¼	3½	1	2½	1⅛	5	Savoy Oil	No sales.					
92	63½	92	63½	93¼	75	145	82	100	Transcontinental, pfd.	No sales.					
8	4½	7⅜	4¼	9⅛	4¾	6½	3½	5	Venezuelan Petrol	3,600	3¾	4	3¾	3⅞	+ ⅛
8⅛	5½	8	4⅝	8¼	4⅞	9⅛	4⅛	$1	Woodley Petroleum	500	4¼	4¼	4⅛	4¼	....
6½	6	6	1⅜	8⅜	2⅛	..	..	25	Y Oil & Gas (new)	No sales.					

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of New York Stock Exchange, Kennedy Building, Tulsa, Okla

1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low		Listed capital	Par value	Div. rate	Last paid	Stocks—	For week Sales	Open	ended September 1 High	Low	Last	Change
32⅞	24¼	37⅝	27⅝	43⅞	27⅛	42⅝	22½	(sh)	922.075	N.P.	50cQ	Oct. 31, 28	Amerada Corp.	6,900	28⅛	28⅛	27	27	—2¼
74	39⅞	82⅛	35⅛	85	51⅛	64¾	43⅛	(sh)	209.180	N.P.	.....	.....	American Republics Corp.	1,500	40	40⅛	38⅜	39⅛	—2¾
60	44¾	50¼	35	53¾	37½	47¼	40½		$57,260,300	$25	50cQ	Dec. 31, 28	Associated Oil	25,000	44	45⅛	44	45⅛	+ ⅞
128⅜	97	131⅜	104	66⅜	50	77⅞	53½		50.000,000	25	25cQ	Dec. 15, 28	Atlantic Refining	43.300	68	68½	66⅛	67¼	— ⅜
33½	23½	35½	20¾	53	20	49⅛	38⅛		35.194.000	25	50cQ	Feb. 5, 29	Barnsdall Corp.	37,200	38¼	39¾	37⅛	38⅝	+ ⅝
94½	50	96¾	65	94⅞	68	90⅞	61		20.785,400	100	.....	.....	General Asphalt	21,400	90½	92	89¼	88	+ 2½
72	50¼	175¾	60⅛	167	79	109	70½		25,000,000	100	.....	.....	Houston Oil	3,200	78½	80⅜	76	77½	— ¾
34	19⅝	32¾	17⅝	38⅜	21¾	39⅜	30	(sh)	959.457	N.P.	50cQ	Jan. 31, 29	Independent Oil & Gas	500	33¼	33¼	32⅜	32⅝	— ¾
12¾	7½	12⅛	7⅝	39⅝	9	52⅝	29		8,203.080	$10	.....	May 31, 24	Indian Refining	37,800	48⅞	49⅝	46⅝	49⅜	+ 1¼
25⅞	16½	37¾	20½	39⅛	27⅜	38⅜	26	(sh)	3.992.122	N.P.	.....	May 1, 27	Lago Oil & Transport	4,000	34½	35	32	32	— ¾
19⅞	12	18⅛	10	19¾	9⅜	18	11¾	(sh)	1,237.078	N.P.	.....	.....	Louisiana Oil Refining	3,200	12½	12½	11⅞	12	— ⅞
28	16½	22¾	12	25½	12½	18½	12	(sh)	330.000	N.P.	.....	.....	Maracaibo Oil	300	15	15	14¾	15	— ¾
63⅜	49¼	58½	31	49¾	33	47⅛	33⅝	(sh)	2,316.692	N.P.	.....	Mar. 31, 27	Marland Oil Co.						
13¾	6	9¼	3	73	4⅝	69⅜	36¼	(sh)	945.939	N.P.	.....	Dec. 15, 20	Mexican Seaboard	14,200	38½	39¼	37	37½	— ⅝
37	20½	39⅜	25½	44½	25⅛	39⅞	30½	(sh)	1,357,461	N.P.	50cQ	Feb. 15, 29	Mid-Continent Petroleum	9,300	35¾	35¾	34¼	34½	— ¾
104½	90	105	97	120½	103¼	121	120¼		$6,718.000	$100	$1.75Q	Sept. 1, 28	Mid-Continent Pet. pfd.	No sales.					
2½	½	3¾	1⅝	7⅜	2⅜	5⅛	3½		24.298,850	10	.....	July 1, 23	Middle States	9.700	2⅝	2¾	2½	2⅝	....
76½	56⅛	65⅞	40⅛	54⅞	38¼	63	40¼		48.807.400	$50	.....	Oct. 20, 27	Pan American P. & T.	11,300	65⅛	69	65⅛	67⅝	+ 3
78⅝	56⅞	66⅜	40¼	58⅞	37¾	66¾	40½		121,097,900	50	.....	Nov. 15, 24	Pan American P. & T. B.	273.400	65⅜	69¼	65	65¼	+ 2⅜
46	30	37⅞	16¾	28⅜	15½	17½	13⅜	(sh)	400.000	N.P.	.....	Jan. 30, 27	Pan American Western B	1,100	14½	14½	14½	14½	....
32	4½	18⅞	8	21⅜	11½	15¼	9	(sh)	198.770	N.P.	.....	.....	Panhandle P. & R.	100	10	10	10	10	+ ⅛
99⅜	51	83	54	108	70	76	47½		$2.935.200	$100	.....	July 2, 23	Panhandle P. & R. pfd.	No sales.					
57⅝	40	60¼	36¼	53⅞	35¼	47	35⅛	(sh)	2.406.796	N.P.	37½cQ	Jan. 2, 29	Phillips Petroleum	8,500	39⅝	39⅝	37¼	38	— ⅛
....	....	1⅛	⅛	5¼	½	3⅜	2		$29,622.925	$25	.....	.....	Pierce Oil Corp.	6,600	2⅛	2¼	2	2	....
7	2¼	5½	2½	7	3½	5⅞	4	(sh)	2.500,000	N.P.	.....	.....	Pierce Petroleum	1.400	4⅞	4⅞	4⅛	4⅞	+ ⅜
60¼	48	55½	45⅝	68	46	65⅝	53¼		60,000.000	25	.....	Aug. 31, 27	Prairie Oil & Gas	6.700	58⅞	59	58⅞	58⅜	+ ⅜
137½	122½	190	130⅜	280	172	61⅞	53⅝		$101,250,000	$25	75cQ•	Mar. 31, 29	Prairie Pipe	6.100	64½	64⅜	61	63¾	—1
20¾	11	33⅞	16⅜	29⅞	16	25⅞	17		$37,450,850	$50	.....	Sept. 15, 23	Producers & Refiners	1,100	15	15¼	15	15	—1⅛
41¾	30¾	50	36⅞	49⅝	41	46¾	38¼		2.845.350	50	.....	May 1, 25	Producers & Refiners pfd.	25.000	37	37	37	37	—1
31	25¼	33½	25	31⅝	19	30¾	23¼		75.959.350	25	25cQ	Dec. 1, 28	Pure Oil Co.	12.200	27	27½	26½	26¼	— ¾
27½	22	28⅝	25⅜	56	23	49⅝	39¾		47,025,000	$25	50cQ•	Nov. 15, 28	Richfield Oil	12,900	43	43⅞	42	42⅞	— ½
57⅜	47⅜	54½	44¼	64	44⅝	55¾	49¼	(sh)	611,303	13.40	50cQ	Jan. 10, 29	Royal Dutch, N. Y., sh.	5,800	54	59¼	53⅞	56⅞	+ 3
48⅝	40½	47⅞	41⅜	57½	40⅝	55¾	43⅞	(sh)	£30,000,000	£1	$1.45	July 23, 28	Shell Transport & T.	200	46⅛	46⅛	46⅛	46⅛	+ 1⅛
31	24	31¾	24⅝	39¼	23¼	31¾	25¾	(sh)	20.000.000	N.P.	35cQ	Dec. 31, 28	Shell Union Oil	41.400	29⅜	29⅜	28½	29	....
25⅝	15⅛	26⅜	14¼	27¼	18⅛	39⅜	18⅛		$8.357.000	$10	10cQ	Dec. 15, 28	Simms Petroleum	18.200	38½	39¼	36⅛	36¼	—1⅝
24⅞	16¾	22⅜	15	46¾	17⅜	45	35⅛	(sh)	4.501,915	N.P.	.....	.....	Sinclair Consolidated	271,400	38	38⅛	37⅛	37½	— ⅜
99½	90	104½	97	110	102½	111	107		$16,604,600	$100	$2Q	Nov. 15, 28	Sinclair Consolidated pfd.	200	109¼	109¼	109¼	109¼	+ ¼
37⅛	26⅝	37⅜	24⅛	42⅝	25	46½	32⅞		27.396.590	25	50cQ	Dec. 15, 28	Skelly Oil Co.	22.200	42⅝	43¼	41½	42¼	....
63⅝	51⅛	60⅜	50⅜	80	53	81⅞	64	(sh)	12.594,098	N.P.	65½cQ	Dec. 15, 28	Standard Oil of Cal.	35.700	77¼	77¼	75⅝	76½	— ½
46⅜	37½	41⅜	35⅛	59⅜	37¾	62⅜	48		$611,120.700	$25	25cQ•	Dec. 15, 28	Standard Oil of N. J.	210,000	73⅝	73¾	71	71¾	— ⅜
47¼	30⅜	34⅛	29¾	44¼	28¾	45¾	38		427.973,275	25	40cQ	Dec. 15, 28	Standard Oil of N. Y.	205,300	46⅜	46⅜	44⅛	44½	—1¾
41¾	30⅛	34⅞	30	77	31½	76⅜	57	(sh)	1,206.073	N.P.	25cQ	Dec. 15, 28	Sun Oil	600	73	73½	71	71¼	—2¾
5¼	1	6½	3⅛	14¼	2½	12	7	(sh)	1.267.000	N.P.	.....	Dec. 20, 20	Superior Oil Corp.	4.600	21½	21½	19½	20	—1½
58	48	58	45	74¾	50	68½	57¼		$211.076.650	$25	75cQ	Jan. 1, 29	The Texas Corporation	135.900	70¾	71¾	70	70⅛	— ⅝
19½	12	18⅞	12	26⅝	12⅛	23⅞	16		8.380.340	10	.....	Jan. 3, 28	Texas Pacific Coal & Oil	5.500	18¼	18¼	16⅞	17⅜	—1⅛
39¼	27	29⅛	19	41½	19⅝	40	27⅛	(sh)	2.168,410	N.P.	20cQ	Dec. 15, 28	Tide Water Oil Co.	1,600	35⅛	35¼	34½	35	— ¼
103	87¼	90⅛	85	100⅛	86	97½	90⅛		$20.705.200	$100	65½cQ	Dec. 15, 28	Tide Wat. O. Co. 5% pfd.	500	91⅛	91¼	91⅛	91¼	....
27	20⅞	19⅛	15¾	25	14¾	23½	17½	(sh)	4.796.158	N.P.	.....	Aug. 1, 27	Tide Water Associated	28.300	21½	21½	19⅞	20⅜	— ¼
5½	3	10⅜	3¾	14¾	7¼	14¼	9	(sh)	3,742,029	N.P.	.....	.....	Transcontinental Oil	573 800	13⅞	15¼	13⅜	14¾	+ 1
58⅜	37¼	56½	39⅝	58	42⅝	54½	46		$94.798.100	$25	50cQ	Nov. 10, 28	Union Oil of California	42,200	53⅞	54½	51¼	54	+ 1
120⅜	84¼	127½	94	128⅛	110	150¼	121⅞		31,061.200	100	$1.25Q	Dec. 1, 28	Union Tank Car Co.	400	154¾	154¾	154	154	—1
30⅛	23⅛	34½	24½	44⅞	26	42⅞	28½	(sh)	356.000	N.P.	50cQ	Jan. 2, 29	Warner Quinlan	14,900	34⅜	34⅜	30	30½	—3½
29¾	25⅛	27½	20	38	20⅛	38	30¼	(sh)	490,000	N.P.	50cQ	Jan. 20, 29	White Eagle Oil & Refg.	2,800	35¼	35¼	34⅛	34½	— ½
....	....	....	....	....	....	29¾	18⅛		.....	....	.....	.....	Wilcox Oil & Gas	1,900	30¼	20½	18½	18½	—1½

*Also extras. †Ex-dividend.

STANDARD OIL STOCKS ON NEW YORK CURB

21	16	21⅝	17⅞	22⅜	14⅞	18¾	14		£4,126.460	£1	.....	June 6, 28	Anglo-American Oil	1,200	15	15⅛	15	15	+ 1¾
....	....	3¾	¾	5	1¼	2½	1⅛	(sh)	500.000	N.P.	.....	.....	Atlantic Lobos	No sales.					
76	65	69	50	56½	44½	46½	35		1.000.000	25	$18.A.	Oct. 15, 28	Borne Scrymser	No sales.					
59½	42	60	45	76	53	74¼	65¼		10.000.000	50	$1Q	Dec. 15, 28	Buckeye Pipe Line	100	68	68	68	68	— ⅞
82½	65	126	76½	161	117	193⅜	140⅛		3.000.000	25½	$1Q	Dec. 28, 28	Chesebrough Mfg.	No sales.					
25⅞	17½	22⅝	16¾	23	16	29	17¼		36,057,840	10	.....	Dec. 15, 27	Continental Oil	1,300	21	21½	20¼	21¼	+ 1¼
137	102	137	89	114	67	75¾	60		1.500.000	50	$1A	Dec. 15, 28	Cumberland Pipe Line	No sales.					
63¾	43	68½	47	88	64½	70⅛	59⅛		5.000.000	100	$1Q	Nov. 1, 28	Eureka Pipe Line	No sales.					
32½	9⅞	13½	3½	13	4¼	6⅝	5⅞		16.000.000	100	.....	June 30, 25	Galena Signal Oil	1.000	80	80	80	80	....
68½	52	68½	54	114¾	59¼	126⅞	89⅝		73,117.577	25	30cQ•	Jan. 1, 29	Humble Oil & Refining	3,200	125⅜	125⅝	121½	123⅝	—2¼
144½	125½	182	123¾	290½	176½	340½	290		20.000	100	10% S.A.	Dec. 15, 28	Illinois Pipe Line	150	305	305	303½	303½	—3½
....	....	64¾	37¾	104	56¾	30⅜	26⅝	(sh)	6.458.267	N.P.	25cQ	Dec. 1, 28	Imperial of Canada	14.500	34⅛	37⅞	34	37⅞	+ 3⅛
72½	58	94½	61	91⅞	74⅜	28⅜	26¾		$5.000.000	$50	.....	Feb. 15, 29	Indiana Pipe Line (new)	500	30	30	29¾	29¾	— ¼
35½	28¾	39	28¼	55	35	30⅜	22½	(sh)	7.123.144	N.P.	37½c	Nov. 30, 28	International Pet. (new)	27.900	26½	29⅝	26½	29	+ 3
20⅝	12½	24	13½	32⅜	19⅜	25⅞	21⅜		$6.363.350	12.50	25c	Dec. 15, 28	National Transit Co.	1,200	22⅜	22⅜	21½	22⅜	— ⅛
51½	27¼	44½	31¼	75	38½	85	70		5.000.000	100	.....	July 15, 26	New York Transit	No sales.					
80½	64	100	70	69	56½	63	52¾		2.000.000	50	$3S.A.	Jan. 2, 29	Northern Pipe Line	No sales.					
67¾	55¾	67⅞	52	84	58½	75⅜	64⅛		60,000.000	25	50cQ•	Dec. 15, 28	Ohio Oil Co.	6,400	74⅜	75½	74	75⅛	+ ⅝
24¾	15	39	12	84	28	44½	23⅛		10,000.000	25	$1.25	Dec. 15, 28	Penn Mex. Fuel	1,000	31½	31½	29	31⅛	— ⅞
220	84½	201½	175½	220	167	219½	200		4,000,000	100	$5S.A.	Dec. 20, 28	Solar Refining (old)	200	36⅝	36⅝	36½	36½	—1¼
....	....	....	....	....	....	50	37¾		.....	....	.....	.....	Solar Refining (new)						
74½	61½	27¾	15½	19	15	22½	13		1,000,000	10	$2	Dec. 1, 27	Southern Pipe Line	300	20½	20¾	20	20	....
50	34½	41½	35	71⅞	36¾	69⅞	62		2,000,000	25	50cQ	Dec. 31, 28	South Penn Oil (old)	900	51	51	49⅜	50	—1½
....	....	....	....	....	....	60¼	40⅜		.....	....	.....	.....	South Penn Oil (new)						
56	47½	83	55½	102	70	70	62¾		3.500.000	100	$1Q	Oct. 1, 28	Southwest Pa. Pipe Lines	No sales.					
70½	60½	81½	64⅝	95⅞	70⅞	63	54		228,415.463	25	61½Q	Dec. 15, 28	Standard Oil of Indiana	104.200	56⅞	59¼	56	57⅝	+ 1⅝
36½	16½	20⅞	14⅝	37¾	15	22⅛	18		8.000.000	25	.....	June 16, 24	Standard Oil of Kansas	3,600	23⅛	25	23¼	24	+ 1
134⅝	108	130	111½	179¾	122¼	45¼	35⅛		17.012.559	10	$1Q	Dec. 31, 28	Standard Oil of Kentucky	4,700	37⅝	38	36¾	37⅜	+ ⅜
51⅛	42	49½	40	54⅞	39⅞	50¼	45½		4.559,850	25	63cQ	Dec. 20, 28	Standard Oil of Nebraska	600	48¾	48¾	48	48⅜	— ⅛
372	288	87½	72	134	71	129	110¾		14,000.000	25	62½cQ	Jan. 2, 29	Standard Oil of Ohio	480	118	123	118	120	....
21	15	21	14½	23½	16	18	15		861.000	25	.....	Nov . 1, 19	Swan Finch Co.	No sales.					
109⅜	90¼	....	....	111	72	133¾	105½		125,619,000	25	75cQ	Dec. 20, 28	Vacuum Oil Co.	5,000	127	128	124	126	— ¾

*Also extras.

outside of Salt Creek will become an operating company as the Argo company at the present time has approximately 1,300 bbls. net daily production. President James Owen, of the New Bradford company, in letter to stockholders says that Argo has approximately $900,000 in current assets consisting of cash, bonds, oil in storage and accounts receivable. The directors state the company by purchasing controlling interest in Argo would be taking a proper step to get oil production and property outside of the Salt Creek Field.

Argo company reported for year ended December 31, 1928, earnings of $666,972 and expenses of $341,007, leaving a net before depreciation and depletion of $325,964. New Bradford, which owns 53.14 per cent of the stock of the Salt Creek Consolidated and 87.5 per cent of Mountain & Gulf Oil Co., heretofore has been a holding company only in which earnings were derived from dividends received which amounted to $1,146,282 in 1928. It is the third of the Salt Creek units to take steps recently to extend its operations to other fields and states, the Salt Creek Producers and Mountain Producers being the other two.

ROCKY MOUNTAIN AREA

(Continued from Page 135)

a lost string of tools at 4,620 feet and has moved a new rig over the hole to replace the old one. This well and also the Potlach has had several showings of oil and gas in the deeper horizons and the companies plan to plug back and shoot if no commercial production is found below the present depths.

Northeast of the Pondera Field, on the Conrad Butte Dome, the Adams Syndicate found a showing on Section 29-29-1 at 2,053 feet that may be shot into a small producer. This is a wildcat and interest is high in hopes that a new field is in prospect. A second well is being drilled by the Hawley Syndicate of Spokane.

Another wildcat south of the Pondera Field on Section 9-23-1, is also attracting interest though it is only at shallow depths now. This is the well of the Mitchner Oil Co. and is expected to develop the gas found in the Bannatyne sand by the Mitchner-Mattoon well, or find oil production.

The Midwest Refining Co., drilling on the Bowes Dome south of Chinook, is shut down on top of the gas sand and another gas well is expected. This brings the total of gassers on this structure to seven. High winds have prevented drilling in for a few days.

ROCKY MOUNTAIN FIELDS
Daily Average Pipe Line Runs Week Ending August 31

WYOMING	
Salt Creek	35,210
Frannie	30
Big Muddy	2,210
Oregon Basin	5,500
Byron	.....
Dutton	.....
Elk Basin	.....
Ferris	50
Grass Creek	2,240
Greybull	10
Hamilton	1,050
LaBarge	2,280
Lance Creek	205
Lost Soldier	3,860
Osage	645
Poison Spider	870
Rock River	2,450
Rex Lake	90
Lander	530
Simpson Ridge	40
Teapot Dome	30
Mule Creek	670
Pilot Butte	.....
Total	58,370
MONTANA	
Cat Creek	1,400
Kevin-Sunburst	6,950
Pondera	2,940
Lake Basin	60
Total	11,350
COLORADO	
Moffat	1,250
Fort Collins	2,370
Florence	915
Iles	1,780
Tow Creek	465
Boulder	25
Rangely	100
Total	6,905
NEW MEXICO	
Artesia	845
Cap Rock (Maljamar)	420
Hogback	90
Rattlesnake	900
Table Mesa	.....
Total	2,255
Grand total	78,880

METALLURGY OF HARD FACED ROTARY BITS

(Continued from Page 76)

a surface layer that is probably in the neighborhood of one ten-thousandth of an inch thick. Even the thin layer, however, contains an enormous number of layers of atoms, many of which will be worn away if the metal is softened by the developed temperature.

This action is continuous while the bit is in operation, and the rate of wear will depend upon the hardness and to a lesser degree upon the toughness of the metal when at these temperatures. This being the case, the most suitable alloy is the one that is the hardest while red hot, or in other words, the one that has the highest red hardness.

Metals Differ in Softening

If all metals softened to the same degree when heated, a determination of hardness at ordinary temperatures would make it possible to predict red hardness, and thus foretell the ability of a metal to resist wear. This is, however, not the case. Some metals soften in such a way that a curve showing the hardness at different temperatures would be almost a straight line. Other metals soften more rapidly when first heated and less rapidly at higher temperatures. Still other metals act in the reverse way to this.

Figure 7 shows curves of three theoretically possible alloys. All of these have the same hardness at ordinary temperatures and at 1,000 degrees Centigrade, but vary greatly in hardness over the effective range, which is enclosed by the rectangle. When in use, the active parts of bits faced with such alloys would show great differences in hardness and resistance to wear, and the metal possessing the greatest red hardness would be much superior in efficiency and life. Red hardness, which is the average hardness over the red heat range, gives a much better indication of wear resistance than any other laboratory test that can be made.

Red hardness is an attribute of the composition of the metal. The development of metals used for the cutting edges of oil well drills may be traced through plain carbon steel, alloy steel and ferrous hard-facing metals, leading up to nonferrous alloys consisting of cobalt, chromium and tungsten. Each of these types of alloys possesses greater red hardness than its predecessors, and each also contains less iron and a greater amount of nonferrous elements.

Exceed in Red Hardness

Nonferrous alloys of the cobalt-chromium-tungsten type have greater red hardness than any other known hard facing metals, the use of cobalt instead of iron as a major constituent being apparently responsible for this superiority. Alloys containing iron may have a greater hardness when cold, but soften more or less rapidly when heated, and are much softer at red heats than the cobalt-chromium-tungsten alloys.

This greater degree of red hardness may be demonstrated by comparative drill tests in the field, or experimentally in the laboratory or shop. A simple test is to heat two or more alloys to the same high temperature, and test them with a file. A method giving fairly accurate quantitative results is to measure the hardness at the temperatures in question, which has been done in the laboratory by using a specially equipped Monotron hardness machine.

The curves shown in Figure 8 give the results obtained from these tests on a cobalt-chromium-tungsten alloy, and several hard-facing metals that have an iron base. The results show that the welded cobalt-chromium-tungsten alloy has an average red hardness of 52 Monotron (C47 Rockwell) as compared to 30 Monotron (C28 Rockwell) for the ferrous alloys. This greater hardness under operating conditions accounts for its greater life as a hard-facing metal.

Diamond Substitutes

After hard-faced bits had demonstrated their value, hard-set bits were developed. These bits have a cutting edge surfaced with a hard-facing metal, but also containing inserts of so-called diamond substitutes that increase the rate of cutting and the life of the bit when used on certain formations. The hard inserts act somewhat like teeth, and cut grooves in the face of the rock, thus making it easier for the hard metal on the cutting edge to clean up the hole.

Diamond substitutes consist mainly of tungsten carbide and are all extremely hard. They have greater red hardness than hard-facing alloys because they are considerably harder when cold and do not soften excessively when hot. Diamond substitutes of the extremely hard varieties are brittle and weak, and tend to crack when subjected to welding temperatures. To overcome this other elements are added with the object of increasing the strength and toughness, and decreasing the tendency of the diamond substitute to crack when it is subjected to the welding temperature. The final product is a compromise based on sacrificing some of the possible hardness to secure increased strength and toughness, and it is on the basis of these two properties that the value of the product must be estimated. It was formerly thought that hardness, as indicated by the difficulty encountered in grinding the material, and the melting point, were the two properties that should be investigated by the buyer. This is no longer believed, although both of these properties are obviously desirable. A good diamond substitute should be so tough that the inserts may be found extending like short fingers from the cutting edge after the hard-facing material has worn away.

High Melting Point

Diamond substitutes cannot be used as hard-facing metals because of their extremely high melting point (4,200 degrees Fahrenheit or higher), and must be welded in place with more fusible metals. For this purpose they are supplied in the form of regular or irregular shaped pieces, or sometimes as powder. It is usually more economical to secure it in pieces fairly uniform in size and shape, as it is then easily possible to produce bits containing equal amounts. The use of a powder results in losses that often are as high as 30 per cent of weight of the powder used, whereas there is no loss when pieces of appreciable size are used.

Although the diamond substitute in a hard-set bit does a large part of the drilling, the choice of the hard-facing metal used to fill in between the inserts has a great effect upon the results obtained from the bit. The alloy selected must be capable of holding the inserts firmly, and must also have the highest possible resistance to wear. Diamond substitutes will cut only as long as they remain in position, and if the hard-facing metal wears away between and around the inserts they may either become loosened and drop out or may have such excessive stresses placed on them that they will break away. For these reasons it is necessary to select the best possible diamond substitute and use it in combination with the best possible hard-facing metal.

SAFETY DIRECTORS WILL HOLD ANNUAL MEET

(Continued from Page 138)

Wednesday Morning, October 2

Congress Hotel, second floor, Florentine Room.

9:30 Getting Results—F. D. Rexwinkle, assistant general superintendent manufacturing department, Standard Oil Co. of Indiana, Whiting, Ind.

9:50 Discussion.

10:00 Hazards in Pipe Line Construction—B. F. Fisher, vice president and superintendent, Standard Pipe Line Co., Inc., Shreveport, La.

10:20 Discussion.

10:30 Election of officers.

10:40 Fighting Petroleum Fires in Stills and Storage—Frank G. Benedict, insurance engineer, Sinclair Consolidated Oil Corp., New York City.

11:00 Discussion.

11:20 Safety Inspection in Relation to Safe Refining—L. F. Howbert, safety director, Continental Oil Co., Ponca City, Okla.

11:40 Discussion.

Wednesday Luncheon, October 2

Congress Hotel, second floor, Florentine Room.

Presentation of the 1929 Petroleum Section Safety Contest trophies—Major Henry A. Reninger, president, National Safety Council.

Thursday Morning, October 3

Congress Hotel, second floor, Florentine Room.

9:30 Effective Use of Safety Posters, Film Strips and Safety Topics—C. L. Hightower, safety director, Texas Pacific Coal and Oil Co., Thurber, Tex.

9:50 Discussion.

10:00 Safety in Gasoline and Air-Gas Lift Plants—H B. Bernard, vice president, Sinclair Oil & Gas Co., Tulsa, Okla.

10:20 Discussion.

10:35 Protecting the Worker Against Petroleum Vapors—F. L. Newcomb, supervising engineer, Standard Oil Development Co., Elizabeth, N. J.

10:55 Discussion.

11:10 Knowledge Is Safety—J. C. Bernd, safety director, Sinclair Refining Co., East Chicago, Ind.

11:30 Discussion.

Friday Morning, October 4

Congress Hotel, second floor, Florentine Room.

9:30 Treating Hydrogen Sulphide Cases—Dr. C. M. Aves, Humble Oil & Refining Co., Houston.

9:50 Discussion.

10:05 Minimizing Electrical Current Hazards—H. E. Dischinger, safety inspector Shell Petroleum Corp., Houston.

10:25 Discussion.

10:40 Interesting Manufacturers in Safeguarding Equipment—R. E. Donovan, chief safety engineer, Standard Oil Co. of California, San Francisco.

11:00 Discussion.

11:15 Safety Contests Are Desirable—S. H. McKenty, manager industrial relations, the Atlantic Refining Co., Philadelphia.

11:35 Discussion.

The following constitute the members of the executive committee: General chairman, C. W. Smith, director of safety, Standard Oil Co. of Indiana, Chicago; vice chairman, R. S. Bonsib, chief safety inspector, Standard Oil Co. of New Jersey, New York City; chairman Atlantic division, L. W. Evans, safety engineer, Atlantic Refining Co., Franklin, Pa.; chairman Great Lakes division, J. P. Sutton, manager industrial relations, Ohio Oil Co., Findlay, Ohio; chairman Mid-Continent division, E. D. Murphey, safety engineer Mid-Continent Petroleum Corp., Tulsa, Okla.; chairman Gulf division, C. L. Hightower, safety director, Texas Pacific Coal & Oil Co., Thurber, Tex.; chairman Rocky Mountain division, L. F. Howbert, Continental Oil Co., Denver; chairman Pacific division, R. E. Donovan, Standard Oil Co. of California, San Francisco, Calif.

BECKLEY PRESIDENT OF CALIFORNIA ASSOCIATION

(Continued from Page 137)

fineries, which were then operating five natural gasoline extraction plants in California. He became superintendent in 1921 and general superintendent in 1923. In 1924, Mr. Beckley became general superintendent of the Pacific Gasoline Co. and moved to Los Angeles.

Upon the purchase of the Pacific Gasoline Co. by the Standard Gasoline Co. and amalgamation of plants by the Standard Oil Co. of California he became general superintendent of the Standard Gasoline Co. Mr. Beckley was responsible for the operations of the 42 plants of the Standard Gasoline Co. located in Kettleman Hills, Taft, Ventura and Los Angeles Basin. He was one of the early members of the California Gasoline Association, which has now become California Natural Gasoline Association, serving as director and member of executive committee three years. He was elected vice president at the June election.

DANIEL J. ROWAN DEAD

Daniel J. Rowan, 73, of Lancaster, Pa., who died recently, was connected with the Standard Oil Co. for 40 years and was superintendent of the eastern division of the National Transit Co. for six years prior to his retirement 11 years ago. Mr. Rowan was superintendent of school buildings in Lancaster until his illness. Besides his wife, he is survived by two children and one granddaughter. He also leaves a brother, John F. Rowan of DuBois, and two sisters, Mrs. Michael and Mrs. Burns of Buffalo. N. Y.

BENTONS TO DEVELOP LEASES

CALGARY, Alberta, Canada, Aug. 31.—Benton Oils, Ltd., has concluded a deal with the Shaw Oil Co. of Texas for the development of its 4,300 acres of leases east of the Blood Reserve.

TEXAS PANHANDLE

(Continued from Page 70)

with 190 quarts at 3,405-70 feet. This well was drilled to a total depth of 3,735 feet.

Erath County

Kelsey and others' No. 1 Lowe was temporarily abandoned; Lone Star Oil & Refining Co.'s No. 3 Elliott, initial production of 1,224,000 feet of gas at 4,085 feet; Texas Pacific Coal & Oil Co.'s No. 2 Smith, initial production of 310,000 feet of gas after a shot with 20 quarts at 3,490-3,520 feet.

Shackelford County

Combest & Adkin's No. 1 Matthews was dry and abandoned at 634 feet; Dull & Earl's No. 2-B Matthews, dry and abandoned at 1,291 feet; A. J. Hughes' No. 3 Hill, dry and abandoned at 718 feet; Johnson-Gilbert's No. 1 Moberly, dry and abandoned at 1,272 feet; Engle's No. 4-B Matthews, initial production of 20 bbls. oil after having been shot with 50 quarts at 1,127-50 feet; Moutray Oil Co.'s No. 1 Moberly, dry and abandoned at 1,101 feet; Roeser & Pendleton's No. 12-A-88 Cook, location abandoned; Big State Oil Co.'s No. 10 Russ Webb, initial production of 35 bbls. at 790-95 feet; Tannehill's No. 23 Neivell, dry and abandoned at 954 feet; Vacuum Oil Co.'s No. 5-C Matthews, initial production of 20 bbls. at 1,114-25 feet.

Palo Pinto County

Schnaufer's No. 1 Costello was temporarily abandoned at 350 feet; R. O. Rochelle's No. 1 Diamond Furniture was dry and abandoned at 435 feet.

Stephens County

Prairie Oil & Gas Co.'s No. 2 Rogers was dry and abandoned at 4,040 feet.

SOME USES OF OIL AND GAS SEPARATORS

(Continued from Page 37)

upon the design and operating efficiency of the entire system. Lowering the pressure at the trap increases the velocity of the fluid and gas passing through the system. But in certain tests it so decreased the efficiency of one trap as to condemn it. The same test on another make of trap made very little change in its separating qualities.

In Field Practice

In field practice the capacity of a separating unit is dependent upon the volume that may be passed through it while the system functions within the critical limits of its component parts. Assuming that the trap functions as a separator, and that sufficient provision has been made to carry away the oil, the volume of gas carried through can be easily computed.

A general flow formula which has given very good results is given below:

General Flow Formula

$$Q = C\sqrt{\frac{[(P_1)^2-(P_2)^2]\,D^5}{L\,G}}$$

Where

Q = the quantity in cubic feet flowing per hour at atmospheric pressure;
P_1 = the initial pressure pounds per square inch absolute.
P_2 = the final pressure pounds per square inch absolute.
D = the inside diameter of the pipe in inches.
L = the length of pipe line in feet.
G = the specific gravity of the gas.
C = a coefficient depending upon formula used.
$C = 2782$ = Towl formula.

$$Q = C\sqrt{\frac{(P_1^2-P_2^2)\,D^5}{L\,G}}$$

P_1 = 14.6 pounds + 10 pounds — 24.6 pounds = 10 pounds pressure on trap.
P^2 = 14.6.
D = 10 inches.
L = 200 + 7(47) = 529 = 200 feet length of line.
G = .90.

$$Q = 2782\sqrt{\frac{[(24.6)^2-(14.6)^2]\,10^5}{529\times .90}}$$

$$Q = 2782\sqrt{\frac{[605.16-213.16]\,100{,}000}{476.1}}$$

$$Q = 2782\sqrt{\frac{39{,}200{,}000}{476.1}}$$

$$= \sqrt{82{,}335}$$

$Q = 2782 \times 278 = 798{,}432$
$24Q = 24(798{,}432) = 19{,}162{,}416$

or 19,000,000 cubic feet per day trap capacity.

In the above calculation it will be noted that seven right-angle bends were included in computing the length of the line. For each bend a length of line equivalent to 47 feet was added. Although the actual length of line was only 200 feet, because of constrictions to the flow a length equivalent to 529 feet is used.

An hourly modulus of 2,782 is used as a constant. This constant will check very closely with the average lease line.

The specific gravity of gas is taken as 0.90. Where velocities approaching critical points are observed the heavier gas fractions will carry over. In usual cases where the velocities are low the densities have increased. Field checks indicate that this value is essentially reliable when used in the formula.

For rapid calculations it has been found that this formula will approximate volumes within the accuracy of the manometer readings.

Good Connection Practice

Three drawings are shown which indicate some good connection practice. These piping schemes may be altered somewhat to fit conditions, but they show a predetermined trap connection.

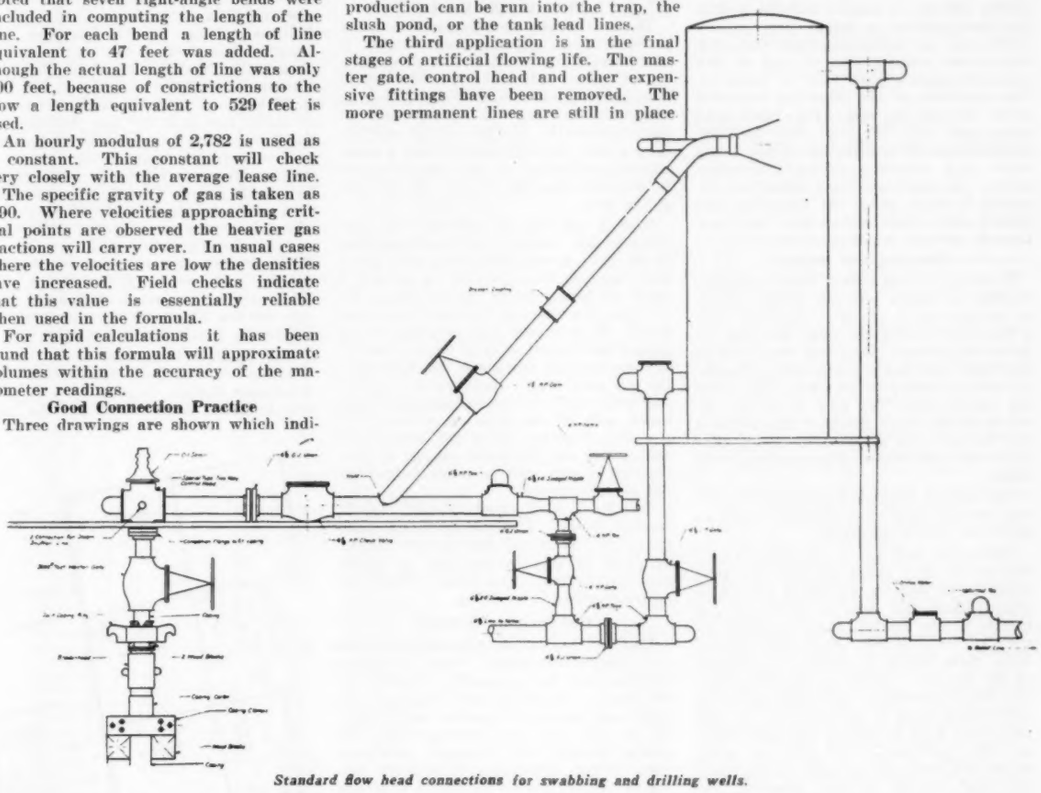
The first shows the connections as the well is being "drilled in." The control head and oil saver are in place, a check valve is in place for swabbing. An oil flow line by-passes the trap. This by-pass can flow either to the slush pit or the storage tank. It will be noted that at no place is an elbow used. Tees are used to change direction. An easy flow is allowed to the trap.

The flexibility of these connections is shown when it may be necessary to boost a natural flowing well. No connections are changed except for the removal of two bull plugs and the oil saver. Tubing head and air connections are added. This arrangement can be made quickly after the tubing is run. It is now possible to flow the well either through the tubing or the annular space between the casing and tubing. Valves are arranged to permit easy rocking. By either method the production can be run into the trap, the slush pond, or the tank lead lines.

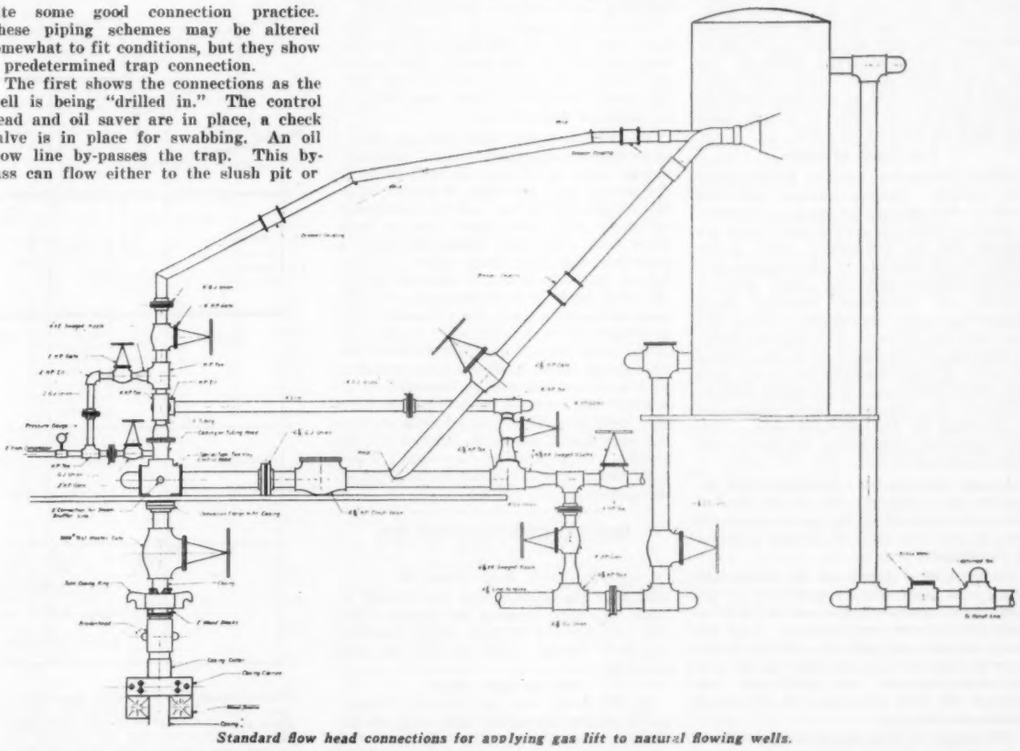
The third application is in the final stages of artificial flowing life. The master gate, control head and other expensive fittings have been removed. The more permanent lines are still in place and the same flexibility of operation is permitted as before.

It will be noted that during the entire period of usefulness of the separator, no connections to or from it were changed. This is good practice and the original installation should be designed with this point in view. Angularity of flow lines can be obtained by the use of expanding flexible couplings. Often the entire hook-up is largely flexible couplings.

A good oil-gas separator will give satisfaction commensurate with the care and intelligence used in selection and installation.



Standard flow head connections for swabbing and drilling wells.



Standard flow head connections for applying gas lift to natural flowing wells.

In order to show everything in the drawing it was necessary to show the Trap Set much lower than in actual practice thus making welded angle much sharper than it would be in the field.

PRECAUTION IN THE HANDLING OF SUCKER RODS

(Continued from Page 74)

found that the surface on the outer radius of the kink has a minute crack. This will give exactly the same results as a cut with a hatchet, saw or file.

Once hauled properly into the derrick the joint must be very thoroughly and properly cleaned.

The new A.P.I. sucker rod joint is in effect a tool joint and must be treated as a tool joint. The fact should be remembered that the clearance between threads on box and pin or coupler and pin is only one-thousandth of an inch.

The fact is readily apparent that only one or two small grains of sand or dirt will make such a joint tight to make up. The shoulders of the joint are depended upon greatly to make the joint hold when made up. The joint must shoulder up properly so examine every joint and reject any where a damaged shoulder exists. A cable tool joint cannot be expected to hold when the shoulders are burred, nor when either pin or box threads contain any dirt, sand or grit.

Reducing Pin Breaks

It is safe to say that a very large percentage of sucker rod pin breaks would be eliminated if all new rods run into a hole were pulled out after the first 24 hours run, broken down and reset just as new cable tool joints are broken and made up once or twice to set them before being put to their full load of work. In one field the Shell company has reduced rod jobs over 60 per cent by seeing that the above and following precautions were taken.

Having got the rods into the hole properly for the first time the next thing to see to is proper operation.

When the well has to be pulled to recup or for any other purpose the first thing to be done if maximum service is desired from the rods, is to put a rod hanger in the derrick, then tie a flag on the first stand of rods, start them out and hang them stand by stand in rotation in the hanger. Never lay them down in the dirt or the walk. Having flagged the first stand there is no difficulty in running them back in exactly the same order as they were pulled so that the same boxes and pins always make up together. In good rotary drilling practice the stands are not mixed in running back. The tool joints should fit, so precautions are taken that each pair set up originally when new are always run together. Do the same with sucker rods. The user should keep in mind at all times that the A.P.I. sucker rod joint is a tool joint and must be treated as such.

Use Long Wrench

When joints are hard to break use a long wrench. Do not hammer with the back of the wrench or with a hammer.

Neither cable nor rotary tool joints are broken out by hammering with a 14-pound sledge hammer so why hammer the smaller sucker rod tool joint with a wrench or two-pound hammer. Such hammering will undoubtedly flatten the box and the threads will not fit truly, or one side of the box may be lengthened by only a few thousandths of an inch and when made up the shoulder will be tight on one side but a feeler gauge can be inserted in the opposite side. This high shoulder will make the joint rock while pumping and the pin will break.

In one area where a company had excessive pin breakage, out of 64 broken pins examined, 62 of the boxes measured long on one side and all showed evidence of hammering.

In case of a break or an unscrewed joint, do not simply pull out to the broken rod, replace it and run it back in. Pull all rods and remake them. Cull out every kinked and bent rod. If this is not done another fishing job will result in a few days because, as previously explained, the skin or surface of the rod is broken at the kink.

This point is illustrated in the case of a string of new rods that were put in a 3,000-foot well with 2-inch tubing. They ran 47 days and had been pulled several times for a recupping job. Then an unscrewing job occurred and the rods dropped. After recovery no precautions were taken to remove the bent rods. Six days later a body break occurred, then in four days another, and soon every two or three days until after six or eight such breaks the string was thrown out. That string was ruined by want of care. Other strings in the same field, made by the same manufacturer and operated under the same conditions, have had occasional breaks but by proper culling of damaged rods did not show records like the above.

How Breaks Start

The reason why such breaks occur may be of interest. Simply and roughly it may be said that steel is a mass consisting of many individual crystals closely touching each other and held together by mutual attraction. In the process of manufacture the surface of the rod obtains a thin tough skin which has a much greater resistance to the separation of its particles than do those in the interior of the rod.

Now if this skin be unbroken the particles in the interior will hold together. If the skin breaks then from this break there spreads from particle to particle a crack or break which travels along the surfaces of contact of the crystals or particles. It is steady and progressive and cannot be stopped so it is but a question of time once the surface is damaged until the rod gives way. Examine any broken rod where failure was caused by a body break and if the ends have not been pounding together after the break, one can clearly see the point on the surface reached by the split or crack before the rod actually broke.

One final word about care of rods in crooked holes. Use rod guides. They reduce the wear and tear on the tubing, resulting in less friction and a lighter load on the rods, and hence reduce the power required in pumping.

Use Double Pin Rods

Use also double pin rods with hardened and ground couplings. Such couplings operate with but a small proportion of the friction caused by soft couplings. A shaft and bearing of similar metals cannot be run with any success while dissimilar metals will operate satisfactorily. A soft coupling and ordinary tubing are approximately similar, a hardened coupling and ordinary tubing are not.

Do not run too long in a crooked hole. Pull rods even if the well does not require it until an idea can be obtained on how long it is safe to run between pulling jobs. Do this so that rods will not be damaged beyond use.

Every man in the field who has charge of production equipment should take particular pains to educate the well crews in the proper care and use of sucker rods. His efforts in this line will be well repaid as crews will soon learn that a little more care and time taken to make a good job will save them many a nasty fishing job. It is not a case of getting the well back onto production in the shortest possible time; the principal thing is to get the well back onto production in the most correct and safe manner possible in as short a time as is consistent with good careful work. Some 15 or 20 minutes more time over a whole rod job may mean the difference between no fishing jobs for a month as against a fishing job within three or four days; which pays the biggest dividend at the end of the year?

WEST TEXAS FIELDS

(Continued from Page 69)

tion 36, was shut down for casing at 1,562 feet after topping the pay at 1,556 feet and flowing 10 bbls. after standing for four hours. This is also a weak showing.

In the Leck Area

In the Leck area of Winkler County, north of the Hendricks Pool, the Skelly Oil Co. deepened its No. 2 Leck this week from a former total depth of 2,765 feet to 2,800 feet. It was formerly completed producing 33 bbls. per hour from pay encountered at 2,755 feet, but another pay was found from 2,775-2,800 feet, and the well increased to 2,100 bbls. of fluid daily, 2 per cent water. Deepening this well was brought on by the slumping off of Nos. 1 and 2 to 623 bbls. total production in July, and the company figured that deepening would aid them to a considerable extent.

Glasscock Extension

The 2½-mile extension to the southwest in Glasscock County was fully consummated this week when the Henshaw Pool was finally lengthened out by the Lion Oil & Refining Co.'s No. 1 Coffey and the Kirby Petroleum Corp.'s No. 1 Phillips coming in for fair-sized producers. The former test is located in Section 22, Block 33, Township 2s, T.&P. Survey. It swabbed and flowed 240 bbls. in 24 hours. Pay in this well was topped at 2,152 feet and the hole bottomed at 2,240 feet. The latter test is located one-half mile to the east of the former, in Section 23, same block. It swabbed 285 bbls. in 24 hours. Top of the pay is 2,212 feet, and total depth is 2,268 feet. Four offset locations were staked this week, one by the California Co., one by the Kirby Petroleum Corp., one by the Sun Oil Co. and one by E. L. Smith. The Kirby company already had made location for its No. 2 Phillips, an east offset to the Lion's No. 1 Coffey.

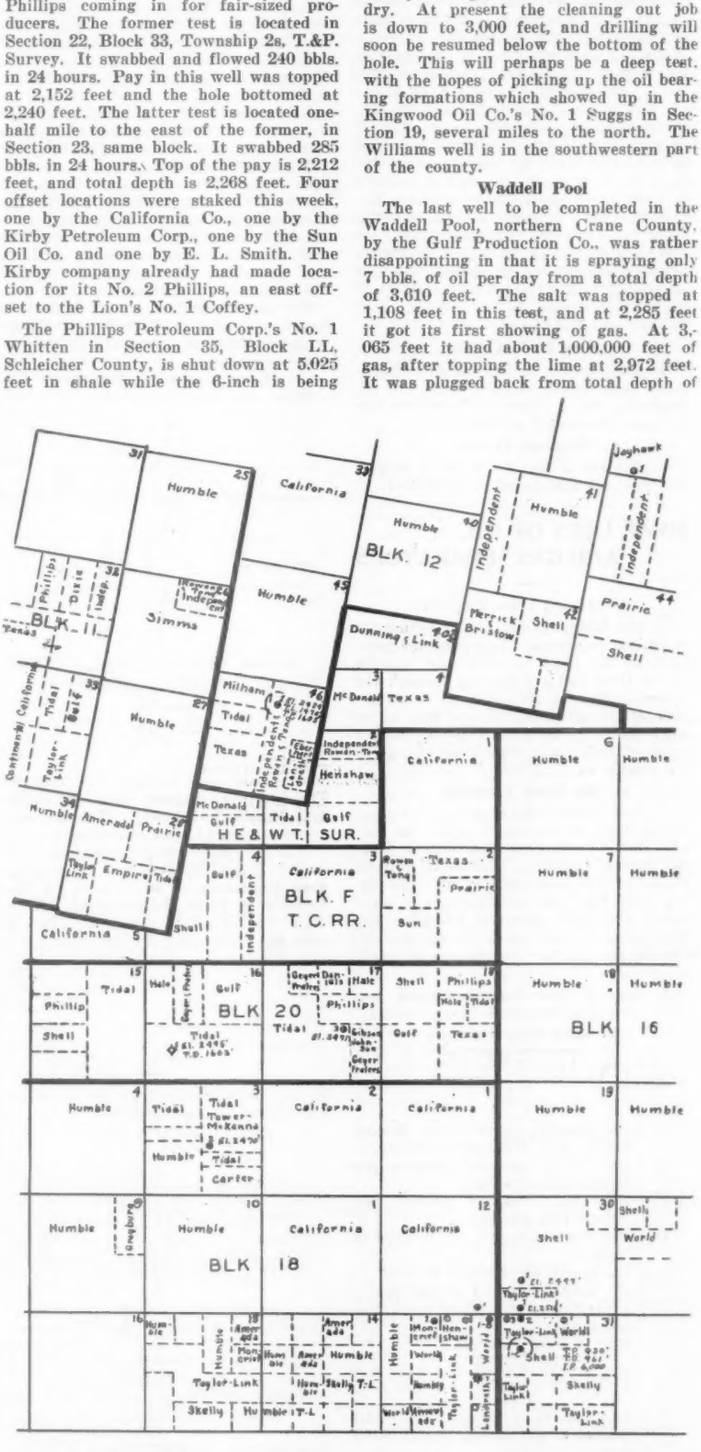
The Phillips Petroleum Corp.'s No. 1 Whitten in Section 35, Block LL, Schleicher County, is shut down at 5,025 feet in shale while the 6-inch is being underreamed to 4,985 feet to shut off water that is coming from 4,942 feet. The well will be carried deeper.

Interest in Irion County

Since the discovery of the Brown & Fox' No. 1 Tankersley in Irion County, and the completion of the second producer in this pool by the Banner Oil Co., this county has received much attention and renewed interest, both in drilling activities and lease trades. The last but one of the most interesting features of this county will be the cleaning out and deepening of the old P. H. William's No. 1 Ashe in Section 20, Washington County Railway Survey. This test was drilled to a total depth of 3,535 feet several years ago, and was abandoned as dry. At present the cleaning out job is down to 3,000 feet, and drilling will soon be resumed below the bottom of the hole. This will perhaps be a deep test, with the hopes of picking up the oil bearing formations which showed up in the Kingwood Oil Co.'s No. 1 Suggs in Section 19, several miles to the north. The Williams well is in the southwestern part of the county.

Waddell Pool

The last well to be completed in the Waddell Pool, northern Crane County, by the Gulf Production Co., was rather disappointing in that it is spraying only 7 bbls. of oil per day from a total depth of 3,610 feet. The salt was topped at 1,108 feet in this test, and at 2,285 feet it got its first showing of gas. At 3,065 feet it had about 1,000,000 feet of gas, after topping the lime at 2,972 feet. It was plugged back from total depth of



Plat showing latest wildcat discovery in Pecos County, Texas, 5¼ miles northwest of the new Taylor-Link Pool which is also shown. Rowan & Tong own this new discovery, but have closed a deal with the Independent Oil & Gas Co. for a half interest in the well, 500 acres of leases and 320 acres of royalty. Independent is to do the operating. The well topped the lime at 1,470 feet, the pay at 1,605 feet and was shut down in top of the pay, estimated good for at least 3,000 bbls. daily. Shell Petroleum Corp.'s late big well in the Taylor-Link Pool is shown encircled.

3,610 feet to 3,420 feet. Production in the Yates Pool, Pecos County, has passed the 50,000,000-bbl. mark according to production figures from the production departments, and proration umpire of the field. Some of the wells show as high a potential at the present as they did when they were completed, and a few show a higher potential, although the majority of them have fallen off appreciably. The east side of the field is much more prolific than the west side, which is exactly contrary to the Hendricks Pool in Winkler County.

West Texas Production

Average daily production for week ending August 31:

County—	Wells	Prod.
Crane	317	38,219
Crockett	43	1,470
Ector	3	....
Fisher	7	1,260
Glasscock-Howard	369	38,165
Jones	73	3,270
Loving	13	1,042
Mitchell	142	2,428
Pecos	322	131,216
Reagan	243	17,419
Runnels	3	18
Scurry	5	25
Upton	239	8,870
Ward	11	1,727
Winkler	597	129,891
Total	2,387	374,990

WEST TEXAS COMPLETIONS

Week Ended August 31

Fisher County

Cranfill & Reynold's No. 1 Flanagan, located 990 feet from south and west of Section 200, Block 1, B.B.B.&C. Survey, had an initial production of 300 bbls. at 3,115-19 feet. Roeser & Pendleton's No. 1 Haught had an initial production of 137 bbls. at 3,120-27 feet.

Jones County

The Texas Company's No. 3 Camp, located 1,189 feet south and 326 feet west of NE cor. of Section 13, Block 19, T.&P. R.R. Survey, was dry and abandoned at 3,029 feet.

Runnels County

Boyce and others' No. 1 Land was temporarily abandoned at 1,350 feet. Reese & Cates' No. 1 Clayton was temporarily abandoned at 1,185 feet.

Taylor County

Magnolia Petroleum Corp.'s No. 1 Hamner was dry and abandoned at 3,170 feet.

Pecos County

Phillips Petroleum Corp.'s No. 2 Monroe topped the pay at 1,345 feet, was drilled to a total depth of 1,385 feet, was shot with 50 quarts at 1,349-84 feet, was reshot with 110 quarts at 1,347-82 feet and had an initial production of 130 bbls.

Ward County

Gulf Production Co.'s No. 2 Wristen, located 220 feet northwest and 1,470 feet southwest of Section 18, Block 5, H.& T.C.R.R. Survey, topped the pay at 2,416 feet, flowed 45 bbls. daily before shot; was shot with 200 quarts at 2,416-68 feet and had an initial production of 115 bbls. daily.

Winkler County

Skelly Oil Co.'s No. 3 Daugherty, located 1,375 feet south and 330 feet west of Section 22, Block 26, topped the lime at 2,440 feet, topped the pay at 2,740 feet, was drilled to a total depth of 2,740 feet and had an initial production of 355 bbls. daily.

DAILY AVERAGE PRODUCTION BY LEASES WINKLER COUNTY

Week ending August 26

S.T.R. Company, farm—	Wells	Prod.
Amerada Pet. Corp.:		
Cowden, 3, B-12	3	131
Atlantic O. P. Co.:		
Hendricks-A, 34, B-5	8	1,369
Hendricks-B, 44, 26	5	815
Hendricks-D, 29, B-5	8	855
Hendricks-E, 41, B-5	6	1,262
Hendricks-G, 46, 26	7	53
Hendricks-H, 30, B-5	1	off
Hendricks-F, 40, 26	13	1,226
Bankers Prod. Co.:		
Hendricks, 30, B-5	1	18
V. T. Bolin:		
Brown-Altman, 4, B-5	1	4
California Co.:		
Hendricks, 29, B-5	7	911
Cranfill & Reynolds:		
Hendricks, 28, B-5	2	281
Hendricks-B, 35, B-5	1	91
Hendricks-C, 33, 26	1	208
Hendricks-E, 33, 26	2	324
Cranfill and Texon:		
Hutchings, 47, 26	1	67
Culberson Bros.:		
Hendricks, 40, B-5	1	73
Eastland Oil Co.:		
Hendricks, 35, B-5	2	337
Hendricks-B, 46, 26	1	162
Gulf Prod. Co.:		
Hendricks-A, 34, B-5	13	4,534
Hendricks-B, 45, 26	11	4,195
Hendricks-C, 40, B-5	6	523
Hendricks, 44, 26	3	1,361
Cowden, 3, B-12	3	553
Humble Oil & Ref. Co.:		
Hendricks-A, 34, B-5	17	5,431
Hendricks-B, 29, B-5	6	1,196
Hendricks-C, 32, 26	8	642
Hendricks-D, 29, 26	7	276
Hendricks-C, 10, B-12	11	6,587
Walton, 48, 26	1	121
Independent Oil & Gas:		
Hendricks-A, 34, B-5	7	1,273
Howe-B, 44, 26	3	200
McCabe, 36, B-5	2	245
Hendricks, 42, B-5	1	8
Vardeman-B, 41, B-5	7	332
Magnolia Pet. Co.:		
Hendricks, 29, B-5	8	436
Marland Oil Co.:		
Hendricks, 33, 26	4	819
Hendricks, 29, 26	2	64
Hendricks, 34, 26	2	178
May Prod. Co.:		
Hendricks, 34, 26	1	15
American Maracaibo:		
Hendricks-A, 28, B-5	1	18
Hendricks-B, 28, B-5	1	158
Mining & Engineering:		
Hendricks, 10, B-12	1	off
Murchison and Cranfill:		
Hendricks-A, 35, B-5	3	459
Hendricks-B, 35, B-5	3	549
Hendricks-C, 35, B-5	1	16
Hendricks-H, 35, B-5	1	819
Hendricks-I, 34, 26	2	43
Prairie Oil & Gas Co.:		
Hendricks, 40, 26	6	1,606
Cowden, 3, B-12	6	4,338
Pure Oil Co. (Lion):		
Hendricks-A, 41, B-5	11	1,952
Hendricks-B, 34, B-5	13	3,772
Hendricks-C, 45, 26	14	6,095
Hendricks-D, 44, 26	1	153
Republic Prod. Co.:		
Hendricks-A, 45, 26	12	2,288
Hendricks-B, 41, B-5	5	133
Shell Pet. Corp.:		
Hendricks-A, 45, 26	5	562
Hendricks-B, 29, B-5	5	1,483
Hendricks-C, 29, B-5	7	645
Hendricks-D, 41, B-5	2	60
Hendricks-E, 40, B-5	3	512
Hendricks-F, 46, 26	5	371
Hendricks-G, 39, 26	1	68
Shell-The Texas Company:		
Cosden-A, 3, B-12	6	1,939
Hendricks, 45, 26	6	2,115
Hendricks-A, 29, B-5	9	2,098
Hendricks-B, 40, 26	4	598
Hendricks-C, 40, 26	6	1,568
Hendricks-D, 40, 26	6	351
Hendricks-E, 39, 26	2	239
Skelly Oil Co.:		
Hendricks, 40, 26	12	6,191
Hendricks-B, 10, B-12	2	19
Hendricks-C, 39, 26	1	140
Southern Crude O. P. Co.:		
T-67 Hendricks-A, 42, B-5	3	150
T-67 Hendricks-3-A, 4, B-12	4	423
T-67 Hendricks-B, 44, 26	5	501
T-67 Hendricks-3-B, 33, 26	4	371
T-67 Hendricks-C, 33, B-5	5	620
T-67 Hendricks-2-D, 28, 26	5	1,281
T-67 Hendricks-E, 42, B-5	4	188
T-67 Hendricks-F, 33, B-5	5	465
T-68 Hendricks-3-A, 35, B-5	3	108
T-68 Hendricks-B, 46, 26	2	185
T-88 Hendricks-A, 44, 26	6	1,020
T-88 Hendricks-B, 4, B-12	4	723
T-88 Hendricks-C, 28, B-5	8	987
T-88 Hendricks-D, 4, B-12	6	2,611
T-88 Hendricks-H, 28, B-5	6	1,313
T-88 Hendricks-I, 30, B-5	7	482
T-88 Hendricks-J, 30, B-5	5	627
T-88 Hendricks-K, 41, 26	7	1,156
T-88 Hendricks-L, 4, B-12	4	774
T-88 Hendricks-M, 33, 26	33	16,892
T-88 Hendricks-N, 28, 26	7	717
T-88 Hendricks-O, 28, 26	4	945
T-88 Hendricks-P, 28, 26	2	295
T-88 Hendricks-Q, 27, 26	2	901
T-88 Hendricks-R, 27, 26	3	847
T-88 Hendricks-S, 34, 26	4	1,331
T-88 Hendricks-T, 34, 26	7	1,058
T-88 Hendricks-OU, 41, 26	10	1,597
T-88 Hendricks-V, 29, 26	1	62
T-88 Hendricks-W, 5, B-12	1	248
T-88 Hendricks-CX, 21, 26	3	1,395
T-89 Hendricks-A, 35, B-5	3	225
T-89 Hendricks-B, 35, B-5	2	248
T-89 Hendricks-C, 35, B-5	3	705
T-89 Hendricks-D, 35, B-5	1	186
T-89 Hendricks-E, 40, B-5	3	124
T-89 Hendricks-F, 40, B-5	2	186
T-89 Hendricks-H, 46, 26	2	98
T-89 Hendricks-I, 10, B-12	2	177
T-89 Hendricks-J, 9, B-12	8	2,165
T-89 Hendricks-L, 15, B-12	1	408
T-90 Hutchings, 47, 26	1	209
Texon Oil & Land:		
Hendricks-A, 41, B-5	6	376
Hendricks-B, 45, 26	6	1,784
Winkler O. P. Co.:		
Hendricks, 33, 26	1	off
Total Hendricks Pool	568	125,698

LECK AREA

Company, farm—	Location	Wells	Prod.
Atlantic, Kesslar & Logan:			
Leck, 3, 74		2	420
Amerada Pet. Corp.:			
Leck, 3, 74		2	326
Empire Gas & Fuel Co.:			
Daugherty, 3, 74		3	341
Magnolia Pet. Co.:			
Scarborough, 1, C-22		2	227
Gulf Prod. Co.:			
Scarborough, 1, C-22		1	69
Daugherty, 3, 74		1	1,080
Shell-Llano Oil Co.:			
Daugherty, 1, C-22		4	237
Shell-Danciger:			
Daugherty, 3, 74		2	140
Skelly Oil Co.:			
Daugherty, 22, 16		2	706
Tidal Oil Co.:			
Scarborough, 1, C-22		1	162
Prairie Oil & Gas Co.:			
Leck, 16, 74		1	373
Daugherty, 3, 74		1	198
Scarborough, 1, C-22		1	67
Warner-Quinlan:			
Leck, 3, 74		1	393
Total Leck Pool		24	4,739

O'BRIEN POOL

Marland Oil Co.:			
Morton, 10, B-12		2	204
Wentz Oil Corp.:			
Morton, 10, B-12		1	200
Simms Oil Co.:			
Sealy, 50, F		1	19
Richardson et al:			
Stockton, 50, F		1	115
Total O'Brien Pool		5	538
Total Winkler County		597	130,975

PECOS COUNTY

Week Ended August 27

Company and lease—	Wells	Prod.
M. H. Black:		
Fee	1	14
California Co.:		
Yates, Lease 1	18	10,868
Smith, Lease 1, Sec. 37	3	529
Smith, Lease 1, Sec. 23	7	2,106
Smith, Lease 1, Sec. 21	3	1,167
Smith, Lease 2	2	118
Smith, Lease 3	12	2,823
Smith, Lease 1	1	8
Tippett, Lease 1	1	33
Cosby Drilling Co.:		
Smith	1	235
Dorn & McGee:		
Pecos Valley	1	20
Grayburg Oil Co.:		
Pecos River bed	6	436
Salvage		401
Gulf Prod. Co.:		
All leases	38	17,654
Humble Oil & Ref. Co.:		
Smith-A	10	2,280
Smith-B	7	1,112
Kirby Pet. Co.:		
Tippett	2	60
Kirby Pet. & Edson:		
Tippett	1	240
Marland Oil Co.:		
Yates-A	6	623
Yates-A salvage		5,057
Mazda & Savoy:		
Smith	3	660
McCarty Oil Co.:		
Gray	1	10
Bennett	1	14
McMan Oil & Gas Co.:		
Smith-A	1	1,543
Smith-B	4	1,435
Smith-C	7	714
Tippett	2	254
Richardson	1	201
McMan & Marland:		
Yates	16	5,923
Mid-Kansas & Transcontinental Co.:		
Yates-A	27	16,290
Yates-B	27	8,599
Yates-C	11	7,853
Yates-D	7	9,151
Yates-E	2	427
Yates-F	4	949
Yates-G	3	1,397
Yates-H	9	5,898
Smith	5	2,010
Smith	18	4,801
J. D. O'Mara:		
Butz	1	38
Pecos Valley Oil Co.:		
Fee, Sec. 22, Blk. 26	2	58
Phillips Pet. Corp.:		
Monroe	2	175
Ramsey	2	660
Smith	2	635
Plymouth:		
Perry	1	30
Red Bank Oil Co.:		
Smith	5	500
Shell Pet. Co.:		
Tippett	11	3,074
Smith	11	1,419
Smith-B	1	677
Smith-D	4	1,055
Smith-E	1	18
Simms Oil Co.:		
Smith	7	7,380
Skelly Oil Co.:		
Tippett	1	85
Taylor-Link:		
University	2	499
Total Yates Field	322	130,216

WEST TEXAS PIPE LINE RUNS

August 14 to August 21

Runs Through Trunk Lines

	Last period
Atlantic P. L. Co., Port Arthur, Tex.	38,500
Gulf P. L. Co. to Coast via Ranger, Tex.	30,003
Humble P. L. Co., Comyn, Tex.	42,456
Humble P. L. Co., Ingleside, Tex.	44,691
Illinois P. L. Co. via Del Rio, Tex.	35,863
Magnolia P. L. Co. to Del Leon, Tex.	28,407
Pasotex P. L. Co., El Paso, Tex.	9,777
Shell P. L. Co., Healdton, Okla.	41,765
Shell P. L. Co., Houston, Tex.	14,126
The Texas Company, Houston, Tex.	46,910
Total	331,498

Tank Car Shipments

Reagan County Co., Kemper, Tex.	210
Thomas & Brann, Grant City	100
Orient, McCamey, Tex.	100
American Pet. Co., Pyote, Tex.	4,651
Southern Crude O. P. Co., Wickett, Tex.	11,958
Total	17,019

Runs to West Texas Refineries

Amarillo Prod. Co., Pyote, Tex.	Off
Bluebonnett Ref. Co., Wickett, Tex.	1,406
Burford Ref. Co., Pecos, Tex.	2,722
Col-Tex Ref. Co., Colorado, Tex.	7,000
Cosden Ref. Co., Big Spring, Tex.	8,020
Great Western Ref. Co., Big Spring, Tex.	3,783
Humble Oil & Ref. Co., McCamey, Tex.	9,669
Midland Ref. Co., Midland, Tex.	1,503
Tonkawa Ref. Co., Pyote, Tex.	1,033
Valley Ref. Co., Pyote, Tex.	Off
Big Spring Ref. Co., Big Spring, Tex.	2,197
Richardson Ref. Co., Big Spring, Tex.	2,479
Total	40,811

Summary

	Previous week	Last period
Pipe line runs through trunk lines	364,583	331,498
Tank car shipments	18,762	17,019
Runs to West Texas refineries	48,688	40,811
Total daily distribution	432,034	389,328
Total daily production	370,722	370,932
Daily average from storage	61,312	18,396

UNIFORM VOLTAGES AND RATE STRUCTURE

(Continued from Page 42)

the peak load. In the event of a breakdown in the first case only a small part of the transport system is put out of commission. In case of power transmission possibly the whole system may be put out of commission—hence the possible loss is much more serious.

In addition to all of the above, the distribution of electric power involves certain peculiar risks which are a source of much additional expense not experienced by the distributors of other products. At Wink in West Texas, for example, lightning on one occasion hit the main power line, burned out several transformers and a number of meters and caused other damage running into thousands of dollars.

Standard Voltages

Bound up with the question of a standard rate schedule is another very important point which power companies must rectify and that is the question of standard voltages for high tension lines. At present current is supplied to fields at 2,300, 4,000, 6,900 and 11,500 volts, for example. A company operating in several areas may have available for transfer from one area to another transformers which, however, cannot be used because the voltage is not the same in both areas. Two companies may be supplying power in one area and it may be desired, for good and sufficient reason, to switch from the service of one to the other, but, unless both companies supply the same voltage, it cannot be done without purchasing other transformers. Serious efforts are being made in order to standardize equipment; a standard voltage should be decided upon and demanded of the power companies; if they failed to comply the use of their power should be discontinued.

All of this has to be taken into consideration in rate making.

Question of Contracts

It may be well to call attention to the question of contracts. The several clauses in electrical contracts vary widely. Much would be gained by simpler and uniform contracts.

It may be asked why there are different prices per kw-hr. of demand and different amounts of free kw-hr. per kw. of demand? Why cannot the demand charges be universally the same and the free kw-hr. per kw. of demand the same or even why any demand charge at all? Why varying rates for different types of service?

A demand charge is necessary because a power company operates under rules and regulations which require that in serving a customer it must be prepared at all times to do so and consequently must have the necessary equipment to supply the demand. Therefore, if a customer demands a certain supply of current he is charged for it and if he uses that full demand 100 per cent of the time, the power company's equipment is being used full time, and is not lying idle, but if the customer does not use it 100 per cent, then the power company has equipment which cannot earn profit 100 per cent of the time; but which has been installed in compliance with law in order

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to meet the stated demand at any moment.

Varying Demand Rates

Power companies have these varying demand rates and amounts of free kw-hr. for the following reason: As in any other business, a power company must earn profit on its investment. Now suppose a power company lays two main lines 200 miles long, one north and the other south from the power station. The north line passes through an undeveloped country with arid stretches such as West Texas with towns sometimes 50 miles apart and little or no development in the country between them, while the south line passes through a fully developed country with towns at short intervals having industries. It is assumed that the two lines cost the same to install.

Capital investment is written off in a certain number of years—the length of time dependent upon various circumstances. It will be quite evident that the south line will have a much greater earning capacity per mile than the north line because the opportunities to sell power are many times greater than are possible in the north line. Upkeep and depreciation being the same, it is evident that in order to write the two lines off in the same time, it will be necessary to charge more per kw-hr. for the power supplied through the north line than the south line. This is accomplished by the varying demand charge and free kw-hr. per kw. of demand.

In reality this method is used because of a psychological effect on the consumer. Suppose the demand charge and free kw-hr. charges were the same on the imaginary north and south lines. To earn the sum required to make the lines profitable, customer "A" on the north line and "B" on the south line, both using the same quantity of current, would both pay say $2 per kw. of demand and both would get 50 kw-hr. free for each kw. of demand, but the sliding scale part of "A's" bill would read, say, "For next 40 kw-hr. per kw. of demand, 3 cents per kw-hr.; for next 5,000 kw-hr. 2.5 cents; for next 5,000 kw-hr. 2 cents; for all in excess 1.75 cents"; whereas "B's" bill would read, "For next 40 kw-hr. per kw. of demand 1½ cents; for next 5,000 kw-hr. 1¼ cents; for next 5,000, 1 cent; for all in excess, .75 cent." Now it will be seen that if "A" and "B" get together and compare contracts "A" would immediately feel he was being overcharged, not understanding the circumstances, as explained previously, causing the sliding scale part of his bill to be so much more than "B's". To overcome this situation the varying demand rate and free kw-hr. per kw. of demand were evolved, under which "A" and "B" both find the sliding scale section the same and only the demand rate and free kw-hr. different. This does not mean much to "A," because he cannot visualize the cents per kw-hr. it represents, and he makes no complaint—and much controversy is eliminated.

Consumer's Viewpoint

So much for the power company's point of view. Consideration of the consumer's point of view shows that he is not particularly interested in the fact that the power company had laid a line into his territory and that it has to charge certain rates in order to render an adequate return on the investment, but he is interested in knowing just what makes up the rate charged. He wishes a brief and open explanation, without camouflage, that anyone can understand. The resentment engendered by a deceptive method of rate making must be eliminated. The customer understands that in a new and undeveloped region, higher rates may be necessary for a time, but he can see no reason for hiding this fact in the rate structure.

The purpose of this paper is not to discuss what the rate should be but to create discussion that may bring about a simple and readily understood rate structure.

The following suggestions might be taken as a basis. It will be admitted that the rate structure of any given power system must be determined by the conditions affecting that particular system. The base might be a certain sum per (name plate) horsepower rating of the motor, plus a certain sum per kilowatt-hour of consumption. Necessarily the power company would include all such items as transmission costs, power factor, load factor, fuel clauses, etc., when setting such a rate for any given district.

It is appreciated by the consumer that rates might vary throughout different districts but the power company must be frank—it must convince the consumer that the charges made are warranted. The consumer will be much better satisfied if he knows exactly what rate he will actually pay when he signs a contract instead of finding out afterwards that some clause, printed in small type, has affected his bill in an unexpected way.

The above mentioned problems, factors and difficulties must be taken into consideration and an equitable solution must be found in order to formulate a standard rate structure that would be economically sound both for purchaser and supplier.

It is the writer's personal opinion that a committee from the American Petroleum Institute should meet a committee from the power supply companies and go into the whole question of rate structures. Such a conference should result in a better understanding of the other party's problems and in a mutually satisfactory schedule of rates. In many cases the present rates are unsatisfactory to the oil operators and while electric power has many advantages, the operators cannot afford to use it on account of prohibitive costs. In order to obtain the oil operator's business, the electric power companies must improve their methods of rate making so that they will be uniform and competitive with other forms of power used by the oil industry, otherwise the oil operators will obtain the advantages of electric power by erecting their own electric generating plants. With modern equipment now on the market, it is possible, even on quite a small scale, to erect semiportable or permanent plants and supply power at the well at less cost than power companies will now supply it to the small or medium demand customer.

ASSOCIATION ANNOUNCES COMMITTEES' PERSONNEL

The personnel of the standing committees of the Western Petroleum Refiners Association has been completed and was announced by the association last week. There are eight of these committees which have direct charge of various phases of the association's activities.

The following are members of the committees:

Manufacturers: L. R. Crawford, chairman, Producers & Refiners Corp.; H. W. Camp, Empire Oil & Refining Co.; Walter Miller, Continental Oil Co.; J. M. Wadsworth, Independent Oil & Gas Co.; Dr. E. R. Lederer, Texas Pacific Coal & Oil Co.; Dr. F. W. L. Tydeman, Shell Petroleum Corp.; M. E. Foster, Phillips Petroleum Co.; R. J. Black, Sinclair Refining Co.; C. R. Barton, Tidal Refining Co.; J. A. Sartori, Producers & Refiners Corp.; B. P. Crittenden, Louisiana Oil Refining Corp.; R. T. Colquette, Root Refining Co.; Sylvester Dayson, Lion Oil Refining Co.; W. F. Simms, Panhandle Refining Co.; H. D. Bennett, Mid-Continent Petroleum Corp.; E. A. Metcalf, Standard Oil Co. of Kansas; F. N. Williams, Simms Oil Co.; D. H. Cristman, Shreveport-El Dorado Pipe Line Co.; K. J. Smith, Skelly Oil Co.; J. B. Edwards, White Star Refining Co.; F. E. Holsten, Barnsdall Refineries, Inc.; E. J. Mary, Chalmette Petroleum Corp.

Finance: Roy B. Jones, chairman, Panhandle Refining Co.; L. R. Crawford, Producers & Refiners Corp.; George D. Locke, Barnsdall Refineries, Inc.; M. J. Grogan, Louisiana Oil Refining Corp.

Traffic: P. M. Miskell, chairman, Empire Oil & Refining Co.; F. H. Walker, Shreveport-El Dorado Pipe Line Co.; B. J. Burchett, Shaffer Oil & Refining Co.; D. F. McCarthy, Producers & Refiners Corp.; H. W. Roe, Mid-Continent Petroleum Corp.; E. W. Sieboldt, Shell Petroleum Corp.; A. F. Winn, Skelly Oil Co.; S. B. Myers, Independent Oil & Gas Co.; H. W. Yeager, American Refining Properties; C. R. Musgrave, Phillips Petroleum Co.; W. W. Klingensmith, Transcontinental Oil Co.; H. G. Watts, Derby Oil & Refining Corp.; W. B. Knight, Lion Oil Refining Co.

Credits and Accounting: R. R. Irwin, chairman, White Eagle Oil & Refining Co.; W. Z. Brown, Producers & Refiners Corp.; B. H. Markham, Continental Oil Co.; J. M. Judson, Sinclair Refining Co.; F. H .Bowman, Pure Oil Co.; M. W. Bottomfield, Transcontinental Oil Co.; M. A. Chambers, Panhandle Refining Co.; H. M. Edinger, Barnsdall Refineries, Inc.; Charles Klein, Mid-Continent Petroleum Corp.; A. J. Ahlum, Crystal Oil Refining Corp.; R. F. Barnes, Eason Oil Co.; J. A. McCreery, Champlin Refining Co.; O. W. Crick, Independent Oil & Gas Co.; G. R. Baysinger, Lion Oil Refining Co.; O. K. Wing, Phillips Petroleum Co.; J. D. Powell, Skelly Oil Co.; C. F. Shaffer, Tidal Refining Co.; H. Canon, Root Refining Co.

Marketing: P. M. Miskell, chairman, Empire Oil & Refining Co.; H. B. Earhart, White Star Refining Co.; R. W. McDowell, Mid-Continent Petroleum Corp.; D. P. Hamilton, Root Refining Co.; M. J. Grogan, Louisiana Oil Refining Corp.; G. W. Reed, Panhandle Refining Co.; George N. Moore, Cosden Oil Co.; F. A. Pielsticker, Skelly Oil Co.; R. R. Irwin, White Eagle Oil & Refining Co.; C. L. Henderson, Vickers Petroleum Co.; T. M. Martin, Lion Oil Refining Co.; W. L. Scott, American Refining Properties; E. L. Miller, Shell Petroleum Corp.; L. R. Crawford, Producers & Refiners Corp.; E. S. Karstedt, Continental Oil Co.; H. A. Trower, Phillips Co.

Legal: W. C. Franklin, chairman, Tidal Refining Co.; J. C. Denton, Mid-Continent Petroleum Corp.; W. P. Z. German, Skelly Oil Co.

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Membership: George D. Locke, chairman, Barnsdall Refineries, Inc.; D. G. Gray, Dale Oil & Refining Co.; P. M. Miskell, Empire Oil & Refining Co.; J. B. Atkins, Shreveport-El Dorado Pipe Line Co.; F. A. Pielsticker, Skelly Oil Co.; H. T. Ashton, Lubrite Refining Co.

OKLAHOMA FUEL OIL MARKET ADVANCES

(Continued from Page 36)

apparent on Monday and Tuesday of this week.

Most of the larger refiners have not changed their prices on U. S. Motor gasoline and other grades but price concessions were available from other refiners. Spot sales of the U. S. Motor grade were reported as low as 7 cents the first of the week and this price was being shaded in quotations from differential territory. Natural gasoline prices were from one-fourth to one-half cent under last week.

There are so many possible developments that might affect the motor fuel market that few care to predict what will happen over September. It was expected that buyers would reduce their purchases as much as possible with the end of August in expectation of lower prices. There has been a more or less general feeling that gasoline prices would slump with the end of the main consuming season.

One large refiner on Tuesday expressed confidence that the U. S. Motor market would stiffen if the sellers will hold to their present quotations a few more days. He says that the jobber demand will continue heavy through September. Jobber storage is low, according to the reports received from field salesmen and this refiner is confident that the buyers will be forced to purchase substantial quantities in a few days.

This optimistic view is not shared by all market observers, including some of the sellers. The lowering of the tank car market in the East, including New York tank wagon prices, the expected reduction in export prices and the uncertainty regarding the plans of refiners who had large gasoline inventories at the end of August are the bearish factors in the market, the importance of which cannot be predicted at this time.

Another refinery executive places all the responsibility for the gasoline market over the remainder of the year on California operations. If a substantial reduction in California crude oil production can be made this month through the application of the state gas conservation law, this refiner believes that the Mid-Continent crude oil market will continue firm and this in turn will be reflected in a stable gasoline market. Unless this goal is accomplished a general lowering of crude oil and gasoline prices is predicted for the immediate future.

Gasoline and Naphtha

Weather conditions were favorable over the week-end, including Labor Day, and refiners in Oklahoma were hopeful that this would result in rush orders over the remainder of the week. Spot business was fair on Tuesday. The larger refiners were quoting the August price of 7¾ cents for the U. S. Motor grade on Monday and Tuesday with a one-eighth to one-fourth differential for each of the 400, 390 and 375 endpoint grades.

Oklahoma U. S. Motor gasoline has been sold over the first 15 days of September as low as 7⅛ cents with spot shipments at 7 cents. The 50-52 450 grade of naphtha is now available in Oklahoma at 7¼ and 7½ cents.

Last week one large export company placed an export order in Oklahoma and North Texas for 390 endpoint gasoline. The purchase, most of which was placed with North Texas refiners, is reported to have totaled 1,250,000 gallons. The domestic demand for high gravities is dull.

Kerosene and Distillate

With less activity in the kerosene demand several buyers have endeavored to secure price concessions following the August advance. So far as Oklahoma refiners are concerned these concessions were not obtainable the first of the week. A majority of the refiners are well taken care of in regard to kerosene.

Refiners state that the dry weather has slowed up the fall demand. Fall plowing has been delayed, but an improvement is expected in the kerosene demand later in the month.

Two or three refiners advanced their price on furnace oil distillate to 4 cents with the expectation of getting out of the market. One refiner reported a few sales at that price. There will be a substantial movement of distillates starting this week. These shipments are contract sales which are usually based on published quotations on date of shipment.

Natural Gasoline

Natural gasoline buying was less active the last few days of August and there was no improvement on Monday and Tuesday. Like the refiners, many of the natural gasoline manufacturers expect the demand to improve later in the month. One of the largest buyers withdrew from the market last week but will resume buying when the market becomes more stable.

The A and AA grades were available on Tuesday at a low of 6½ cents and the remaining grades at 6¼ cents.

Fuel Oil and Gas Oil

The general situation in regard to fuel oil and gas oil has already been explained. A price of 50 cents appeared to be the low of the Oklahoma market on Tuesday. This price prevailed for the gravities under 18 with a high cold test. The low for the 18-20 material was 55 cents with little available under 60 cents. Some of the higher gravities were also advanced. Low cold test material of low viscosity are the grades in demand. Grades meeting these requirements, although low in gravity, brought as high as 60 cents last week.

Gas oils were practically unobtainable last week for immediate shipment on spot sales. Two of the largest refiners in the

State are paying 2¾ cents for straight-run gas oil and low cold test material sold as high as 3 cents. A little low gravity and dark color gas oil is still available as low as 2½ cents.

Late Fields

(Continued from Page 48)

961 feet. The top of the pay was 930 feet.

KANSAS

The Pure Oil Co. has opened up a new producing sand in the Moline Pool in Section 14-20-10e, Elk County. The pool was opened up about five years ago, and has been producing from the 1,600-foot sand. About 75 pumping wells may be redrilled to the deeper horizon which was found in the No. 16 Chaffin, C NW SE, Section 14-20-10, in the Siliceous lime at 2,285-95 feet, where the oil is standing 1,600 feet in the hole. The well will be given a production test.

E. W. Marland, Inc., No. 1 Mackey, Section 30-27-2. Sedgwick County, a mile south of Wichita, has swabbed 52 bbls. while being cleaned out at a total depth of 2,960-62 feet in chat. This wildcat is showing for a commercial well. The fluid is filling up in the hole at the rate of 250 feet an hour.

Sedgwick County Production

The production by companies and leases in the Sedgwick County area for August 30, is shown by the following:

County, lease—	S.T.R.	Wells	Bbls.
Aladdin:			
Bennington	6-26-1	3	397
Barnsdall:			
Rapp	26-26-2	1	15
Samuel	24-25-1	1	Off
Bu-Vi-Bar et al:			
Branch	6-26-1	2	547
Bright "A"	6-26-1	1	198
Bright "B"	6-26-1	6	1,660
Byers	7-26-1	1	122
Emrich	6-26-1	2	673
T. Goodrich	6-26-1	5	327
Lantz	12-26-1w	2	93
Corr	1-26-1w	8	3,023
Lyons	7-26-1e	3	741
Miles	7-26-1	1	17
Reed	1-26-1w	3	2,341
Roll	7-26-1e	1	403
Rothfuss	6-26-1e	1	9
Shawver	7-26-1e	9	6,068
Wright	12-26-1w	6	3,094
Woodward	7-26-1e	1	305
Connell:			
Cross	27-25-1w	1	11
Continental:			
Goodrich	16-25-1e	2	1,134
No. 1 Black	16-25-1	1	39
Westerfield	16-25-1	1	15
Davis-Skelly:			
Wilson	1-26-1w	12	3,431
T. M. Deal:			
No. 1 Townsite	15-26-1	1	650
Derby:			
Bowling	6-26-1e	1	60
Gorman	6-26-1e	4	421
Hladick	15-26-1	1	601
Dickey et al:			
Robbins	21-28-1e	1	275
Dickey:			
Nolan	21-28-1	1	102
Gypsy:			
Hammant	14-26-2e	3	475
W. F. Kinney:			
1 Richards	15-26-2e	1	660
Mars Oil Co.:			
Miller	2-26-2	1	50
Mary Jane:			
Fitch	6-26-1e	2	524
Montour:			
Lavender	6-26-1e	2	924
Patton & Wentz:			
Swenson	6-26-1	1	90
Phillips Pet. Co.:			
D'fford	1-26-1w	3	121
Piefer	6-26-1e	1	110
Plains Oil Co.:			
No. 1 Corn	15-26-1	1	360
Prairie:			
Cross	27-25-1w	1	10
Swyser	36-24-1w	3	262
Producers & Refiners:			
Kuske	24-25-1	1	148
Pyle and Sutter:			
Caldwell	6-26-1e	2	217
Ramsey:			
Mason	15-26-1	2	1,105
Reynolds & Hays:			
Rolls	7-26-1	1	550
Robertson et al:			
Creson	6-26-1	1	713
Shell:			
Fisher	15-26-2	1	52
Lygrisse	15-26-1	1	354
No. 1 Community	15-26-2	3	1,407
Nolan	21-28-1e	1	52
Stearns & Streeter:			
Roll	7-26-1	1	519
Texas:			
Blood	21-28-1	1	137
Tidal:			
Scherger	6-26-1	3	78
Vickers:			
Nessen	6-26-1	3	165
Wentz:			
No. 1 Bright	1-26-1w	1	132
White Eagle:			
Baylor	6-26-1	1	11
Robbins	20-28-1	2	232
Total		127	36,229

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TEXAS OIL MAPS
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LOUISIANA-ARKANSAS

Average Daily Production for the Week Ending August 31

North Louisiana

	Bbls.
Caddo, light	9,530
Caddo, heavy	3,190
Homer	3,880
Haynesville	4,955
DeSoto-Red River	3,540
Elm Grove	545
Bellevue	610
Cotton Valley	2,400
Urania	6,390
Pleasant Hill	1,160
Sarepta	225
Total	36,485

Arkansas

El Dorado	4,615
Smackover, light	6,020
Smackover, heavy	45,330
Stephens	985
Nevada	1,020
L'sbon	1,210
Champagnolle	6,340
Bradley	90
Total	66,110
Total both states	102,595
Total previous week	103,120
Decrease	525

EGG-BEATER SUGGESTS DEVICE FOR CLEANING THREADS OF SUCKER RODS

A purchasing agent for one of the major oil companies operating in Texas was standing on the floor of a derrick watching a crew run a string of sucker rods and was impressed by the time required to clean the threads at the end of each stand as the string was being made up. So he suggested that someone make a device employing the principle of an egg beater but with a brush on it that would do this work quickly and efficiently. As a result of this suggestion the contrivance pictured herewith was designed and made.

The device consists of a cup with handle made from a piece of tubing with a light crank that passes through a bushing in the side near the bottom and engages a horizontal shaft carrying a vertical bevel gear which meshes with a second gear. This second gear is set horizontally and is attached to the lower end of a vertical shaft to which is fastened a wire brush with an outside diameter the same as the inside of the sucker rod pin box.

The picture shows this outfit taken apart. When assembled the cage and gears with the brush are inside the steel cup and the cup is filled with kerosene. When it is pushed up over the lower end of the rods and the crank is turned the brush revolves and the threads are quickly and completely cleaned.

This is one of many time and labor-saving devices made by field men and this particular outfit comes from the Crane County area of West Texas, showing that the workers out there are alive to the needs of reducing production costs.

This cleans the threads

DETECTING TROUBLES IN SAFETY VALVE OPERATION

(Continued from Page 137)

day. The design of this type of valve has become so standardized that nearly all makes have the same parts and proportions. The spring pop valve is superior to the old lever and weight valve, in that the adjustment when once made cannot be easily tampered with. Furthermore the valve is inclined to remain tight under service because it employs the blow-back principle, whereby the valve opens suddenly and freely and, after blowing back about 4 per cent of the steam pressure carried, it seats suddenly and forcibly, thus eliminating leakage at the seat, which if prolonged causes the surfaces to become grooved and leaky. The spring pop valve is evidently more positive in its action than the old lever-and-weight valve.

Faulty Actions

Here we mention some of the faulty or improper actions of the safety pop valve in its operation.

Chattering: A metallic hammering sound or a very decided vibratory noise. This can take place immediately after popping or just before closing. The former indicates insufficient steam flow or excessive back pressure; the latter, too small a blowdown, that is, the adjusting ring is out of position. Chattering will ruin the valve seats.

Leaking: A constant hissing noise at pressures below the blow-back point, caused by damaged seats or defective parts. Leaks should not be neglected.

Simmering: The first escape of steam before the pop, sometimes called "warning," should never be much. Greater simmer indicates a slight irregularity in the seats and incorrect blowdown.

Hang-up: After a valve has popped and blown down an appreciable amount, but will not close tight, it is an indication of mechanical interference. A slight change in the blowdown sometimes corrects this trouble, if not, the valve should be taken apart and the cause looked for.

Blowdown: This is the difference in pressure between the popping and closing points, without consideration of simmer or hang-up. Blowdown is the pop action of a safety valve. The lift or capacity of the valve is controlled by the amount of blowdown, and 4 per cent of the popping pressure is the blowdown on which rated capacity is based.

It is always good practice to grind in a valve just as soon as it shows first signs of leaking and while it is yet possible to remove the slight steam grooves, this can be done without removing the valve from the boiler.

A PRACTICAL SUGGESTION

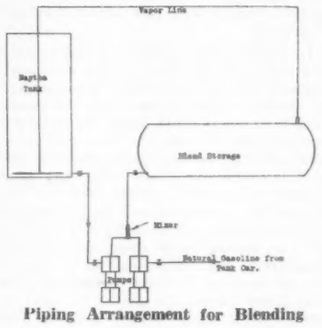
(Continued from Page 137)

bottom of the naphtha storage tank and liberated through a perforated pipe and thereby absorbed. Natural gasoline is pumped or pressured from a tank car or auxiliary storage through a mixer. The naphtha is also pumped through the mixer and the blend piped to the pressure tank. The relative amounts of gasoline and naphtha are controlled by a bypass between intake and discharge on pump, or by the speed of the pump.

The mixer shown in sketch is typical of those on the market and depend on a jet action for their violent motion and turbulent flow. A joint of pipe with suitable baffles can be substituted for the mixes.

Since the A.P.I. degree scale is not graduated uniformly and concordantly, it is necessary to convert the degrees A.P.I.

DETAIL OF MIXER



Piping Arrangement for Blending

to specific gravity in order to accurately calculate the proportions of constituents in securing a desired blend. The formula is:

Specific gravity naphtha × gallons of naphtha + specific gravity of natural gasoline × gallons natural gasoline = specific gravity of blend × total number of gallons.

Example

Assume a 62-degree A.P.I. blend is required and that a 48-degree A.P.I. naphtha and a 85-degree A.P.I. natural gasoline are available. It is desired to know the number of gallons of natural to use per 1,000 gallons of naphtha for such a blend.

62 degrees A.P.I. = 0.731 Sp. Gr.
85 degrees A.P.I. = 0.654 Sp. Gr.
48 degrees A.P.I. = 0.788 Sp. Gr.

.788 × 1,000 + .654 × gals. natural = .731 × (1,000 + gals. natural.) Therefore, number gallons natural = 740.

CARBON COMPANY ORGANIZES

Articles of incorporation have been filed with the Secretary of State of Wyoming for the organization of the Standard Carbon Co., which intends to manufacture carbon black from natural gas. The company is capitalized at $140.000, and the directors include P. B. Dykeman and O. N. Gibson of Riverton, Wyo., and E. D. Edwards of Lander, Wyo. Offices for the company will be located at Riverton. The State of Wyoming ranks third in the production of carbon black from natural gas, according to recent reports.

TESTING WASTE GAS

CHATHAM, Ontario, Aug. 26.—The possibility of utilizing the waste gas of the Turner Valley Field in the production of industrial chemicals will be investigated by Industrial Processes Development, Ltd. of Kingston, Ontario, under a contract recently made with the Dominion government.

The extremely close working tolerances of Jones A. P. I. Sucker Rod threads and joints is illustrated by the fact that the minimum clearance between the largest possible pin and the smallest possible box is only one thousandth of an inch.

In order to assure you that the threaded pins and boxes of Jones H. M. Sucker Rods will reach you in the same clean, perfect condition as they left the factory, every box and pin is carefully fitted with the Jones thread protectors which preserve the original accuracy of the threads as well.

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Every Jones A. P. I. Sucker Rod Joint is a product of micrometric accuracy, inspected with master gauges by tool experts long schooled in that high standard of workmanship that has made Jones H. M. Sucker Rods famous for their tight, snug-fitting joints throughout the petroleum world.

If you would profit by these precision methods of sucker rod manufacture always specify Jones High Manganese Sucker Rods.

THE S. M. JONES COMPANY

TOLEDO, O., U. S. A.

Mid Continent Office—McBirney Bldg., Tulsa, Okla.

JONES SUCKER RODS

Of Interest to Sales Departments

Fuel Oil and Gas Deliveries Less in Pacific Coast Area

By E. T. Knudsen
Bureau of Mines

Total deliveries of gas oil and fuel oil by refining and marketing companies located in the Pacific Coast area (California, Oregon, Washington, Arizona and Nevada) amounted to 145,946,629 bbls. as compared to 155,943,974 bbls. in 1927, a decrease of 9,997,345 bbls. This decrease in total deliveries resulted entirely from a decrease of 15,708,714 bbls. in shipments as domestic deliveries increased 5,711,369 bbls., thus partially offsetting the decline in shipments. Shipments in 1928 amounted to 33,441,025 bbls., as compared to 49,149,739 bbls. in 1927 and domestic deliveries in 1928 amounted to 112,505,604 bbls., as compared to 106,794,235 bbls. in 1927.

The following table shows the distribution of gas oil and fuel oil by uses in the Pacific Coast area for the years 1927 and 1928. This table is based upon information obtained by the San Francisco office of the United States Bureau of Mines from 33 Pacific Coast refining and marketing companies.

Fuel Oil Deliveries, Pacific Coast District, 1927-1928
(Barrels of 42 gallons)

Use—	1927	1928
Railroads	28,333,839	29,086,227
Steamships (including tankers)	36,085,672	34,226,283
Gas and electric power plants	8,220,968	8,455,237
Smelter and mines	3,436,258	4,072,399
Shipbuilding, steel mills and foundries	1,583,380	1,530,058
Chemicals and allied industries	176,640	880,297
Automotive industries	67,994	96,390
Textiles and their products	63,347	47,238
Paper and wood pulp	1,213,902	1,248,964
Logging and lumbering	1,759,465	1,817,799
Cement and lime plants	3,489,034	4,446,458
Ceramic industries	835,396	830,925
Food industries	3,251,571	3,656,481
Other manufacturing	736,895	679,861
Commercial heating	4,326,539	4,841,385
Domestic heating	83,635	59,883
U. S. Navy, Army transports, etc.	3,013,041	3,759,444
Used as fuel by oil companies	5,660,409	5,834,051
Miscellaneous uses	4,456,250	6,936,224
Total domestic deliveries	106,794,235	112,505,604
Foreign and intercoastal shipments	49,149,739	33,441,025
Total deliveries	155,943,974	145,946,629

Railroad deliveries during 1928 increased slightly, but actual consumption was nearly the same as in 1927, as railroads drew on their storage to a greater extent in 1927. While railroad business has been increasing constantly, progress in fuel oil economy has done much to keep consumption down. A good deal of railroad equipment operating from California eastward was converted to coal burning during 1928 and this undoubtedly affected the railroad fuel oil deliveries in California. This equipment is now being reconverted to oil burning, however.

The decline in bunker oil deliveries may be attributed to a certain extent to decreased requirements by oil tankers, as shipments of oil decreased approximately

(Continued on Page 162)

NORTHWEST JOBBERS MEETING

A meeting of the Northwest Oil Jobbers Association has been called for September 9 at the Hotel Androy, Superior, Wis. The meeting has been called as the result of numerous inquiries from members regarding the code of ethics. The membership of the Northwestern Association now includes representative oil jobbers from Minnesota, northern Wisconsin and North and South Dakota.

CONTINENTAL USES TRAILER TRAIN FOR SHORT HAULS NEAR REFINERIES

The new Continental Oil Co. recently formed through a merger of the Continental Oil Co. of Maine and the Marland Oil Co. is now using a truck and trailer tank wagon train to deliver gasoline and lubricating oils to service stations within 50 to 60 miles of its refineries and bulk stations. The Continental company first experimented with a truck and one trailer. A second trailer as shown

Truck and trailer train of Continental Oil Co. in front of main office building of company at Ponca City, Okla.

in the accompanying photograph is now being used.

The tank on the truck has a capacity of about 1,000 gallons of gasoline while each of the two trailer tanks will hold 2,5000 gallons, making the total load about 6,000 gallons. The truck and its trailers are serving the cities and towns in northern Oklahoma and southern Kansas, Arkansas City, Kans., being the most northerly of the cities served, with Tonkawa, Blackwell, Ponca City, Marland, and Braman, Okla., and Wellington, and Winfield, Kans., making up the balance. Trucks of the same type with trailers are in use at Baltimore, Md., and Newark, N. J., and the fleet will be added to as conditions warrant.

The train is equipped with the Westinghouse system of air brake control, and if there should be any accident such as the train parting, the brakes will set and the whole train will be brought to a stop immediately. When the train arrives at the stations to be served the gasoline is drawn out of the tanks by means of a Blackmer rotary pump driven by the automobile engine and as this is a force pump the fluid can be lifted above the elevation of the truck if desired.

The train is 62 feet in length overall and has a road speed of from 16 to 20 miles per hour and is operated by one man. In taking over the equipment of the Continental Oil Co. and consolidating it with the Marland Oil Co. equipment the type of lettering shown on the truck train was adopted as standard for all motor vehicles and it is estimated that it will take 3,600 hours of time to repaint these signs, and this time does not include that required for moving automobiles to paint shops, cleaning and other details.

Who's Who
IN PETROLEUM REFINING AND MARKETING

By C. O. Willson

Nineteenth of a series of articles describing briefly the operations of the major refining and marketing organizations in United States.

Vacuum Oil Co.

The operations of the Vacuum Oil Co., one of the original Standard group, are unusual in several respects. Unlike some of the Standard units which were also refining and marketing units at the time of the dissolution in 1911, the Vacuum company has not attempted to round out its operations with large crude oil production, pipe line systems and company-owned distributing facilities. The company is a small producer of crude oil, buying the bulk of its supplies from other companies and it does not operate a major pipe line system.

In the marketing end, its station facilities are confined to small districts in New York and Pennsylvania. Despite this method of operation it is probably no exaggeration to state that in recent years its refining and marketing operations have been more profitable than any other major company with a similar investment.

In United States the Vacuum company operates two refineries. One of these, located at Paulsboro, N. J., has a rated crude oil capacity of 13,000 bbls. daily and another at Olean, N. Y., has a capacity of 7,000 bbls. daily. Both plants are complete in their operations.

From its early history the Vacuum company has centered its activities in the manufacture of lubricating oils. To obtain the crude oil for its refineries it buys crude oil in several areas. The company buys crude oils in the Mid-Continent of high lubricating oil content and in order to keep the oils segregated transports the oil in tank cars to its refineries.

The company was the first to sell its lubricating oils on a national scale through dealers. The sale of these "Gargoyle" brands of lubricating oils in this country and foreign countries is now its principal business. Except for its relatively few company stations these oils in this country are distributed through dealers. The company in addition to its motor oils has made a specialty of industrial oils and is said to be the largest manufacturer of these oils in United States. The company advertises extensively and has a large marketing organization.

The Vacuum's foreign operations are also extensive. The company either directly or through subsidiary or allied companies operates several refineries in foreign countries. These plants together with its two refineries in this country furnish the supply for foreign countries. The company in connection with its sale of branded lubricating oils in foreign countries is also a large seller of gasoline and kerosene. Its foreign position in the sale of these two products is stronger than it is in United States.

ILLINOIS GASOLINE TAX CHECKS PRICE CUTTING

Conditions all along the borders between Illinois and the adjoining states have been greatly changed since the 3-cent gasoline tax in Illinois went into effect on August 1. Before that date oil stations along the state lines between Illinois where there was no tax and the adjoining states where there was a tax did a very thriving business. The majority of motorists crossing into any of the states where there was a tax on gasoline have filled their tanks and many motorists in these states would cross the border to purchase their motor fuel.

Wisconsin has a 2-cent tax so at the stations where the main highways cross from Illinois into that State motorists prefer to fill in Wisconsin and the trade which formerly went to the Illinois dealers is enjoyed by their competitors across the border. Along the border between Illinois and Indiana the Illinois dealer still has an advantage of 1 cent, but the saving to motorists who fill in Illinois is reduced to 1 cent from 4 cents.

As Illinois, Missouri and Iowa all have a 3-cent gasoline tax the motorists of the two latter states are now patronizing their home stations although at some crossings the Illinois dealers are making cut prices to retain some of their former trade. The Wisconsin legislature is trying to pass an act increasing the gasoline tax in that State to 4 cents but the administration is against the measure as proposed claiming that the tax is unnecessary and that motorists should not be obliged to carry the extra burden.

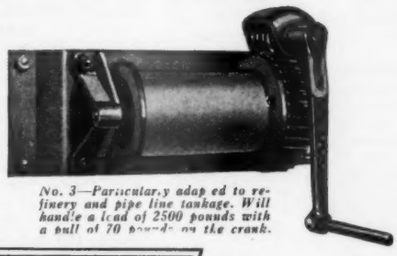
RAILROAD TESTS LARGE OIL-ELECTRIC ENGINE

The Canadian National Railways is making test runs on a 2,660 horsepower oil-electric engine that is expected to revolutionize railroad operation. The engine is the largest and most powerful of its kind and has been evolved through a long series of tests conducted by Canadian National Railways which already has 14 smaller types of this locomotive in service, which have covered, in the aggregate, a total of 1,000,000 miles.

The new engine is Diesel-electric and consumes from 20 to 25 per cent as much fuel as a steam locomotive, greatly lowering operating overhead. The locomotive was manufactured by the Westinghouse Electric and Manufacturing Co. It is built in two units, following the practice in electric locomotive construction, and weighs 650,000 pounds, of which 480,000 pounds is carried on the drivers. It will develop a tractive force of 100,000 pounds when accelerated and 42,000 pounds continuously. The oil engine operates at from 300 to 800 r.p.m. Power is developed in Diesel motors operated by heavy oil. In this type of motor oil is consumed through progressive explosion rather than immediate explosion by which gasoline is utilized in automobiles. The engines used in the new

(Continued on Page 162)

THE BIG 3 OF THE WINCH FAMILY



No. 3—Particularly adapted to refinery and pipe line tankage. Will handle a load of 2500 pounds with a pull of 70 pounds on the crank.

No. 2—The smallest and lightest weight winch of the line. Good for loads up to 1500 pounds with a pull of 55 pounds on the crank.

THESE three sizes meet all the requirements of swing lines of various weights. In convenience and safety they offer the utmost.

The worm-drive holds the swing line in any position *without locking*—protecting operator and tank bottom.

Removal of handle locks winch and renders it tamper-proof.

Built of quality materials throughout—good for a lifetime of service.

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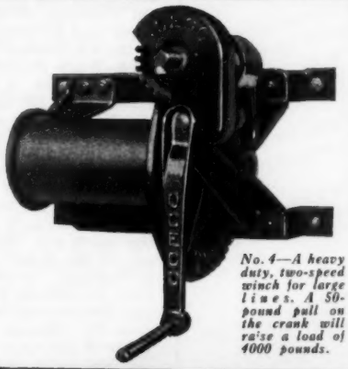
Nolan, Schumacher & Co., Los Angeles, Calif.



No. 4—A heavy duty, two-speed winch for large lines. A 50-pound pull on the crank will raise a load of 4000 pounds.

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NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Gray County

Humble Oil & Refining Co.'s No. 3 W. Jackson, 330 feet south and 230 feet west of the NE cor. of Section 90, Block B-2, H.&G.N. Wilcox-Pampa Oil Co.'s No. 32 Worley & Reynolds, 330 feet north and west of the SE cor. of Section 61, Block 3, I.&G.N.

Hutchinson County

Midwest Exploration Co.'s No. 1 Garner and others, 330 feet north and west of the SE cor. of the NE of Section 124, Block 4, I.&G.N. Same company's No. 2 Garner and others, 330 feet north and 1,650 feet west of the SE cor. of the NE of Section 124, Block 4, I.&G.N.

Potter County

Canadian River Gas Co.'s No. 1 R. O. Allison-A, 5,439 feet north of the north line of Section 42, Block M-20, G.&M. and 386 feet west of the west line of Section 16, Block Y-2, G.B.&C.N.G. and located in the W. T. Palmer Survey No. 1.

Wheeler County

A. R. Anderson and others' No. 1 T. and J. Cuddeback, at the C of the SE of the NW of Section 18, Block 24, H.&G.N. Kosmos Carbon Co.'s No. 1 C. Hicks, at the C of the NW of the NW of Section 52, Block 17, H.&G.N. The Texas Company's No. 2 B. P. Sewell, 660 feet south and west of the NE cor. of the NW of Section 1, Block 24, H.& G.N.

NORTH CENTRAL AND WEST TEXAS

Andrews County

Deep Rock Oil Co. and others' No. 1 C. E. Ogden, 330 feet north and 2,310 feet west of the SE cor. of Section 6, Block A-46, School Land.

Archer County

L. T. Burns' No. 6 L. F. Wilson-M, 450 feet north and east of the SW cor. of the E half of Lot 4, Section 114, A.T.N.C.L. L. T. Burns' No. 2 Wilson-O, 150 feet south and west of the NE cor. of the west 40 acres of Lot 3, Section 114, A.T.N.C.L. King-Corlett & White's No. 1 Wilson-E, 150 feet north and 172 feet west of the SE cor. of Lot 975, Geraldine Subdivision. T. Lomax, Jr.'s No. 1 L. F. Wilson (McCrory, trustee), 150 feet south and east of the NW cor. of Lot 9, Wilson's Geraldine Subdivision. G. L. Pace's No. 1 W. H. Taylor, 150 feet north and east of the SW cor. of Lot 3, Section 17, A.T.N.C.L. Shappell Oil Co.'s No. 10 J. D. Lyles, 150 feet north and 450 feet west of the SE cor. of the NE of the NW of Section 7, Hooper & Wade Survey A-234. Dr. C. W. Wallace's No. 5 Kemp & Kempner, (Block 75), 150 feet south and east of the NW cor. of the NE of Block 75, Kemp Wichita Valley Land.

Dr. C. W. Wallace's No. 4 Dr. C. W. Wallace, 150 feet north and west of the SE cor. of the SW of the SW of Section 6, S.P.R.R., A-1,294. W. C. Young and others' No. 1 W. H. Taylor-B, 2,490 feet south and 150 feet west of the NE cor. of the E half of the NE of Section 1, S.P.R.R., A-428. L. G. Bradstreet Co.'s No. 2 C. E. Pruett, 1,261 feet north and 150 feet east of the SW cor. of Section 27, Thomas Toby Survey A-645. Bridwell Oil Co.'s No. 1 A. J. DeMoss, 150 feet north and west of the SE cor. of the S half of Section 34, Jefferson County School Land, A-240. Continental Oil Co.'s No. 2 J. T. Richardson-A, 450 feet south and 150 feet west of the NE cor. of Section 11, Thomas McCoy Survey, A-269. Douglas Oil Co.'s No. 1-A W. J. McClure, 2,134 feet south and 150 feet east of the NW cor. of Section 13, Crawford Subdivision. Estacado Oil Co. and others' No. 6 H. O. Prideaux, 150 feet north and 750 feet west of the SE cor. of Lot 24, John Dorsey Survey, A-122. Goldsmith & Junker's No. 1 H. Kunkel, 150 feet south and east of the NW cor. of the south 40 acres of the west 80 acres of the H. Kunkel 252-acre tract out of the G. W. Stell Survey, A-381. F. C. Grebin's No. 2 A. M. Hennig, 150 feet north and 600 feet west of the SE cor. of the north 100 acres of Section 21, G. P. Meade Subdivision, I. M. Pasture. Moran Drilling Co. and others' No. 4 J. M. Bloodworth, 1,050 feet south and west of the NE cor. of their 150-acre lease out of the M. Cartwright Survey A-60. Same company's No. 5 J. M. Bloodworth, 750 feet south and 150 feet west of the NE cor. of their 150-acre lease out of the M. Cartwright Survey A-60. E. Parson and others' No. 1 W. H. Terrell, 150 feet south and west of the NE cor. of the S half of Section 17, W. L. Herring Survey, A-168. J. R. Williams and others' No. 2 J. A. Kunkel, 1,050 feet south and 150 feet east of the NW cor. of the west 40 acres of the east 60 acres of Section 4, Thomas McCoy Survey, A-269.

Borden County

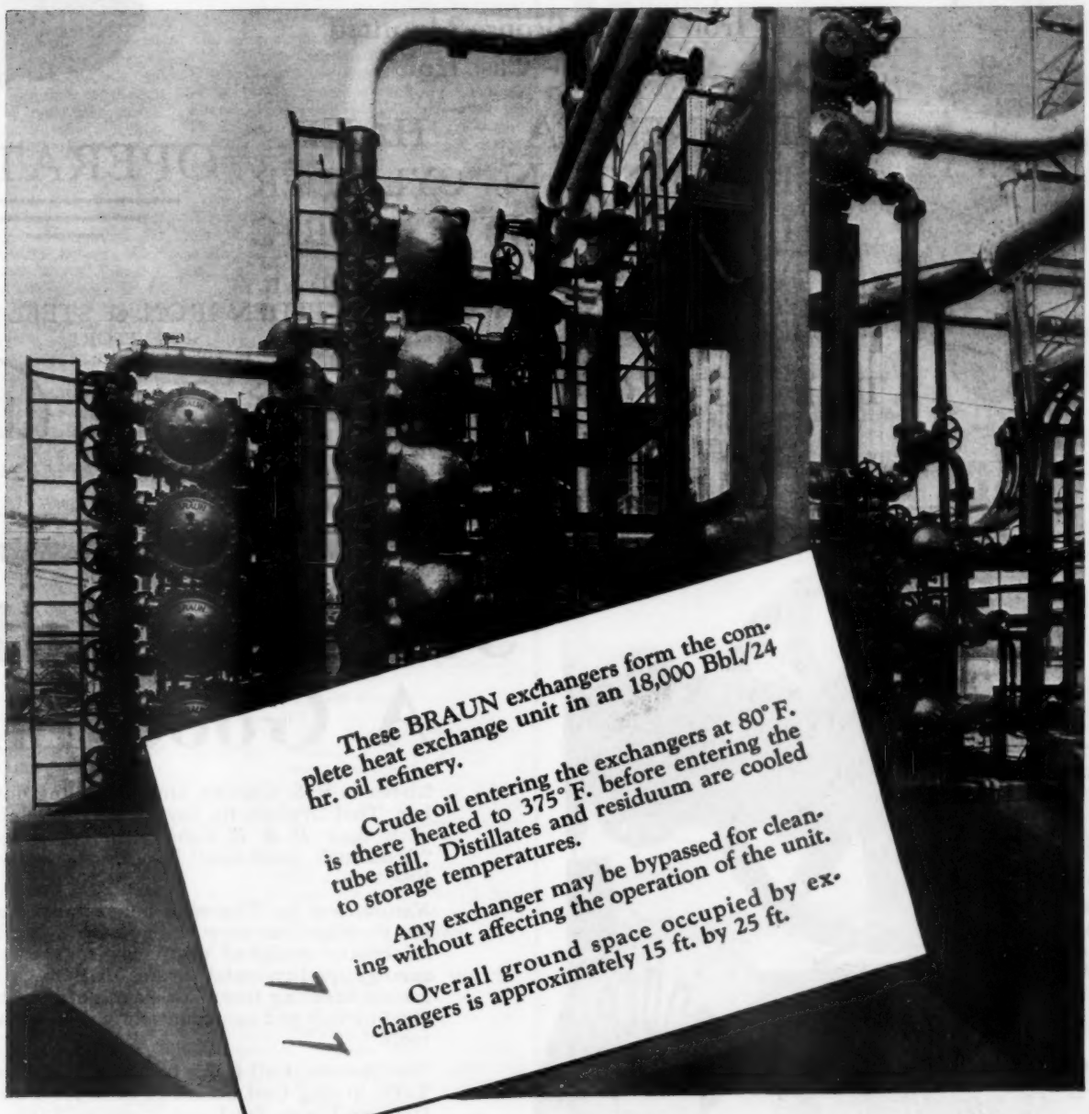
Louisiana Oil Refining Co.'s No. 1 W. L. Miller, 150 feet north and 1,320 feet east of the SW cor. of Section 355, Block 97, H.&T.C.

Brown County

G. A. Bruder, trustee's No. 6 F. H. Cross, 150 feet south and 189 feet west of the NE cor. of the F. H. Cross tract and located in the James Kinney Survey No. 624. P. French's No. 1 Dee Belvin, 150 feet south and east of the most westerly NW cor. of the R. C. Chaddick Survey A-1,202. Green Production Co.'s No. 4 P. Davis, 150 feet south and west of the NE cor. of the J. A. Townsend Survey A-2,007. Same company's No. 5 Davis, 150 feet south and 450 feet west of the NE cor. of the J. A. Townsend Survey A-2,007. Hart Petroleum Co.'s No. 1 Will Allgood, 3,550 feet south and 100 feet east of the NE cor. of the J. Kirkpatrick Survey No. 58, and located in the William K. Dalton Survey No. 57, being 150 feet northwest of the SE cor. of Lot 6.

Humble Oil & Refining Co.'s No. 3 R. Hickman-B, 150 feet south and 500 feet east of the northwest corner of the F. M. Kinsey Survey, A-1,786. Humble Oil & Refining Co.'s No. 1 W. S. Johnson, 150 feet south and west of the northeast corner of the W. S. Johnson Survey, A-2,092. Humble Oil & Refining Co.'s No. 1 E. P. and W. H. Kilgore-E, 630 feet south and 200 feet west of the northeast corner of the Hrs. N. B. Mitchell Survey No. 153. Humble Oil & Refining Co.'s No. 2 Mrs. N. E. Munselle, 150 feet south and west of the northeast corner of the W. Ahrenbeck & Brothers Survey No. 3, A-20. S. B. Owens and others' No. 3 S. B. Cannon, 150 feet north and 950 feet west of the southeast corner of the S. B. Cannon 200-acre tract out of the W. Ahrenbeck & Brothers Survey No. 3, A-20. S. B. Owens and others' No. 1 E. F. George, 550 feet south and 1,786 feet east of the most westerly northwest corner of the E. F. George Survey No. 16. Prairie Oil & Gas Co.'s No. 3 T. J. Clark, 450 feet south and 150 feet west of the northeast corner of the west 63.5 acres of the J. P. Triplett Survey, A-1,957. W. G. Sawyer's No. 1 F. W. Turner, 1,050 feet north and 3,550 feet west of the northeast of the P. Magee Survey No. 649, and located in the M. Duncan Survey No. 55, being 250 feet south and west of the northeast corner of his 40-acre lease. E. L. Smith Oil Co.'s No. 2 Mrs. L. A. George, 150 feet north and 450 feet east of the southwest corner of the Mrs. L. A. George tract out of Section 42, H.T.& B. Survey. The Texas Company's No. 1 S. C. Kessler, 150 feet north and west of the southeast corner of the S. C. Kessler tract out of Section 42, H.T.&B. Survey. Ven-Mex Oil Co.'s No. 7 R. Hickman-D, 150 feet north and 450 feet east of the southwest corner of the J. McGloin Survey. Young Brothers-Alexander & Woodley Petroleum Co.'s No. 10 Kilgore Brothers, 150 feet south and west of the northeast corner of the H. McClure Survey No. 152. Bush & Roberts' No. 1 J. L. Richardson, 450 feet north and 750 feet west of the southeast corner of the S.A.&M.G. Survey. Hart Petroleum Co.'s No. 1 G. W. McHan, 1,150 feet south and 3,075 feet east of the northwest corner of the J. Duckworth Survey No. 56. L. Moore and others' No.

COMPACT yet ACCESSIBLE


These BRAUN exchangers form the complete heat exchange unit in an 18,000 Bbl./24 hr. oil refinery.
Crude oil entering the exchangers at 80° F. is there heated to 375° F. before entering the tube still. Distillates and residuum are cooled to storage temperatures.
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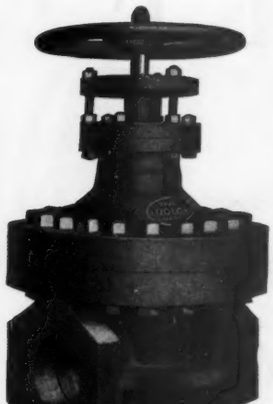

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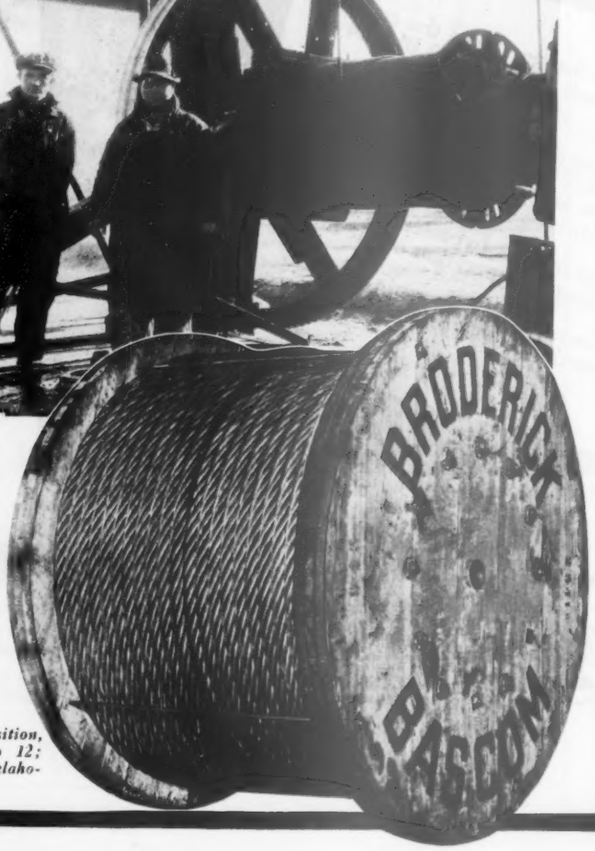

B & B Line "spools pretty" on the cable tool rig of Magnolia Petroleum Company's Homsley No. 3, Earlsboro, Okla. Left: Jack Lee, Tool Dresser; right: R. S. Stanley, Driller.

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Listen to R. S. Stanley, Driller, calling down Jack Lee, Tool Dresser, for saying they have good luck with their *B & B Cable Tool Drilling Lines:* "Good luck, your eye! It's just naturally a good *line.*"

Naturally it is. The wire is specially drawn and put through four very strict tests. It is laid up on machinery designed to impart to the rope that *springy* quality which makes drillers call it "the easiest handling line made—a mighty pretty spooling line that you can count on to drill ahead of the tools."

Distributors in all fields handle B & B Patentsteel, Extra Strong Cast Steel and Cast Steel *Cable Tool* Drilling Lines, Sand and Pumping Lines, and invincible Yellow Strand Rotary Lines.

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BRODERICK & BASCOM ROPE COMPANY
St. Louis, Mo.
Factories: St. Louis and Seattle

BRODERICK & BASCOM DRILLING LINES

N 597

1 J. C. Swindell, 150 feet north and 1,290 feet west of the southeast corner of the north 110 acres of the SE, Section 20, H.T.&B. Survey. E. T. Murray's No. 1 W. B. White, 2,697 feet north and 1,097 feet west of the southeast corner of the G. B. Jennings Survey No. 353.

Clay County

Belcher and others' No. 4 H. C. Evans and others, 150 feet north and 490 feet west of the SE cor., Section 6, Parker County School Land, A-374. Mid-Continent Holding Co.'s No. 1 H. H. Johnson-B, 596 feet north and 1,500 feet east of the SW cor., Section 49, Parker County School Land, A-374. Same company's No. 2 Johnson-B, 596 feet north and 1,162 feet east of the SW cor., Section 49, Parker County School Land, A-374. Same company's No. 3 Johnson-B, 896 feet north and 1,162 feet east of the SW cor., Section 49, Parker County School Land, A-374.

Coleman County

Drake & Cameron's No. 1 A. G. Cannon, 150 feet south and west of the northeast corner of Lot 6, M. D. J. Trevino Survey No. 668. Eastland Oil Co.'s No. 1 H. A. Newsom, 1,750 feet south and 1,175 feet west of the northeast corner of the E. N. Eubanks Survey No. 270. Eastland Oil Co. and others' No. 9 J. P. Morris-A, 150 feet north and east of the southwest corner of Lot 13, William Webber Survey No. 722. Tower & McKanna's No. 2 J. J. Crowder, 150 feet south and 850 feet west of the northeast corner of the J. J. Crowder 240-acre tract out of the J. H. Wood Survey No. 483. Vacuum Oil Co. and others' No. 3 L. Weaver, 3,383 feet south and 3,110 feet west of the northeast corner of the A. Gabel Survey No. 271. White Eagle Oil & Refining Co.'s No. 4 J. P. Morris, 150 feet north and 250 feet west of the southeast corner of Lot 25, William Webber Survey No. 722. Continental Oil Co. and Atlantic Oil Producing Co. and others' No. 6 M. T. Overall, 481 feet north and 1,100 feet east of the southwest corner of the J. H. Barkley Survey No. 700. Dozier and Humphrey Brothers' No. 2 T. A. Sears, 300 feet north and 190 feet east of the southwest corner of the T. A. Sears 171.3-acre tract out of the C. Shanks Survey No. 243. S. B. Owens and others' No. 1 J. Breneke, 150 feet north and east of the SW cor. NW, Section 100, E.T.R.R. Survey. Taylor-Link Oil Co.'s No. 2 M. Barker, 150 feet north and 450 feet east of the SW cor. NE, Section 105, E.T.R.R. Survey.

Comanche County

Humble Oil & Refining Co.'s No. 1 D. M. Faulkner, 660 feet south and east of the most northerly northwest corner of the D. M. Faulkner 192-acre tract out of the John Shelton Survey No. 283.

Cooke County

Petroleum Producers Co.'s No. 1 W. J. Price, 150 feet north and east of the southwest corner of the east 322.5 acres of the W. J. Price 522.5-acre tract out of the J. C. Moore Survey, A-718. Benson Brothers and others' No. 1 J. Paulter, 150 feet south and east of the northwest corner of the L. Mikel Survey, A-747.

Crane County

Gulf Production Co.'s No. 68 J. T. McElroy, 771 feet south of the northeast corner and located on the east line of Gulf Production Co.'s lease out of Section 200, Block F, C.C.S.D.&R.G.N.G.R. R. Survey. Tidal Oil Co.'s No. 10 University Land-I, 1,255 feet north and 859 feet east of the SW cor. SE, Section 47, Block 30, University Land.

Eastland County

H. Atwood and others' No. 2 A. S. Ainsworth and others, 750 feet north and east of the southwest corner of the S. N. Mathias Survey. Dale and Simms Petroleum Co.'s No. 1 S. J. Lyerla, 450 feet south and 150 feet east of the NW cor. NE, Section 25, Block 2, H.&T.C. Survey. Hoffman & Page's No. 5 J. V. Harbin, 830 feet north and 160 feet east of the southwest corner of the J. V. Harbin 91.5-acre tract out of Section 27, Block 2, H.&T.C. Survey. Texwa Oil and Simms Petroleum Co.'s No. 1 J. Lylera, 1,320 feet north and 200 feet east of the SW cor. E half SW, Section 25, Block 2, H.&T.C. Survey. G. Williams and others' No. 1 Mrs. J. C. Hutchenson, 1,000 feet north and 150 feet east of the southwest corner of the S. Dooley Survey.

Hoffman & Page's No. 1 J. B. Butler-B, 150 feet north and west of the SE cor., Section 28, Block 2, H.&T.C. Survey. Lone Star Gas Co.'s No. 1 A. J. August, midway north and south and 660 feet east of the west line of the north half of the east half of the A. J. August 236-acre tract out of Section 475, S.P.R.R. Survey. Same company's No. 2 Storm, 1,988 feet south and 700 feet east of the NW cor., Section 470, S.P.R.R. Survey. O. R. Rochelle's No. 1 J. W. Clark, 150 feet north and west of the southeast corner of the east 40 acres of the NW, Section 29, Block 2, H.&T.C. Survey. Texwa Oil Co. and Kirk's No. 4 J. S. Turner, 150 feet north and 785 feet west of the SE cor. NE NW, Section 30, Block 2, H.&T.C. Survey. Texwa Oil and States Oil Co.'s No. 1 Spencer & McGee, 150 feet north and 750 feet east of the southwest corner of the north 84 acres of the SE, Section 29, Block 2, H.&T.C. Survey. Warner-Quinlan Co.'s No. 1 W. T. Hitson, 698 feet south and 546 feet east of the northwest corner of the S.P.R.R. Survey. Warner-Quinlan Co.'s No. 1 John H. Stamps, 461 feet north and 1,890 feet west of the SE cor., Section 88, Block 4, H.&T.C. Survey.

Erath County

Associated Producers Co.'s No. 1 C. R. Alexander, 400 feet south and 385 feet east of the northwest corner of the C. R. Alexander 156-acre tract out of the J. M. Espinosa Survey.

Glasscock County

Landreth Production and Tidal Oil Co.'s No. 1 A. L. Houston, 330 feet north and 2,310 feet west of the SE cor., Section 29, Block 35, T-2-S, T.&P. Survey.

Howard County

Ward Oil Co.'s No. 9 Dora Roberts, 1,485 feet north and 220 feet east of the SW cor., Section 137, Block 29, W.&N.W.R.R. Survey. Same company's No. 10 Dora Roberts, 1,485 feet north and 640 feet east of the SW cor., Section 137, Block 29, W.&N.W.R.R. Survey. Same company's No. 11 Dora Roberts, 2,430 feet north and 760 feet east of the SW cor., Section 137, Block 29, W.&N.W.R.R. Survey.

Jack County

The Texas Company's No. 2 J. M. Daugherty, 330 feet south and west of the northeast corner of the J. M. Daugherty 150-acre tract out of the I. Hughson Survey, A-256.

Loving County

Humble Oil & Refining Co.'s No. 1 Kloh & Rumsey, at the C, Section 35, Block 55, Township 2, T.&P. Survey.

Montague County

Carter and Rycade Oil Corp.'s No. 9 R. W. Cunningham and others, 150 feet north and west of the southeast corner of their 40-acre lease out of the L. B. Norton Survey, A-574.

Palo Pinto County

R. B. Thomas and others' No. 1 Satterfield heirs, 200 feet north and 300 feet west of the SE cor., Section 2, H.&G.N. Survey, A-2,004.

NORTH CENTRAL AND WEST TEXAS

Week Ended August 21

Menard County

Barnett & Drake's No. 2 Callan ranch, 1,050 feet north and 1,190 feet east of the SE cor. of Section 1, B.S.&F.

Pecos County

Plymouth Oil Co.'s No. 3 F. A. Perry, 1,655 feet south and 1,650 feet west of the NE cor. of Section 29, Block 178, T.C.R.R. R. D. Webb's No. 2 R. D. Webb, 750 feet south and 150 feet east of the NE cor. of the S.A.&M.G. Survey No. 242, A-770, and located in the L. P. Scott Survey No. 312, A-2,171, being 3,700 feet south and 61 degrees east of No. 1. Gulf Production Co.'s No. 25 I. G. Yates, 1,015 feet north and 8,083 feet east of the SW cor. of Runnels County School Land, A-2,169, being 1,015 feet north and 46 feet east of the SW cor. of Proration Unit "D."

Shackelford County

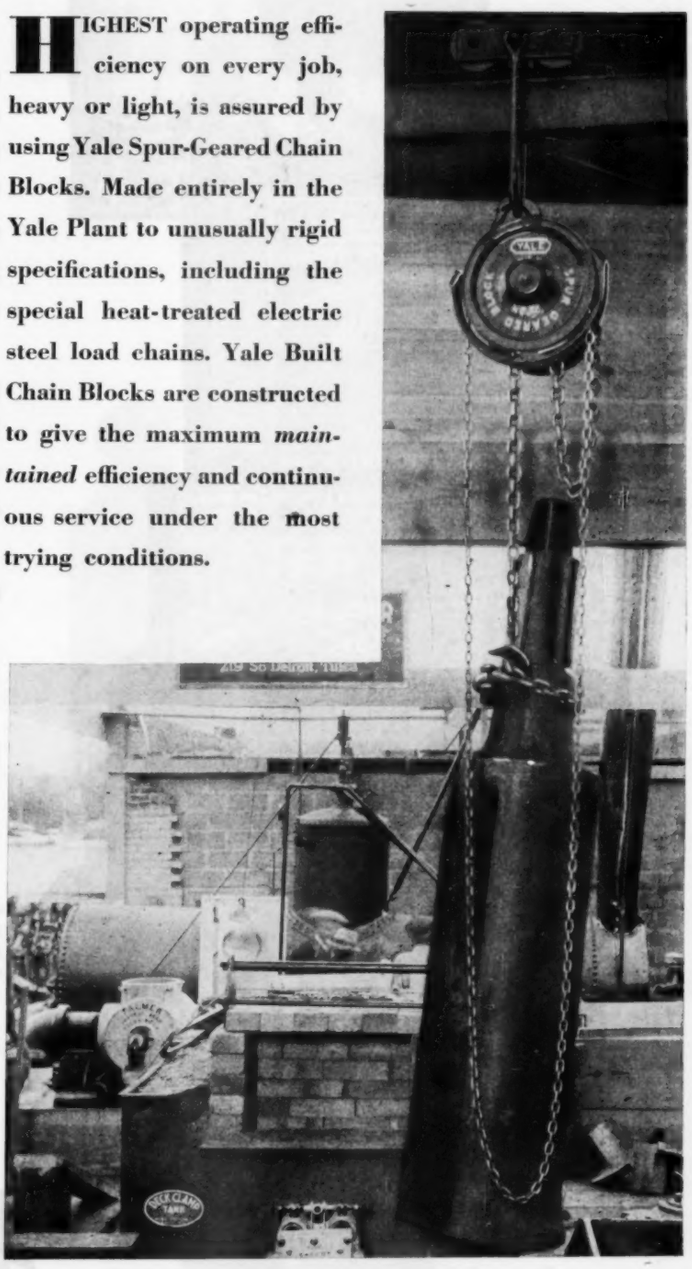
Big State Oil Co.'s No. 1 A. Spears, 150 feet north and east of the SW cor. of Section 1, Blind Asylum Land. Dull-

TRADE YALE MARK

Ball-Bearing Spur-Geared

CHAIN BLOCKS

HIGHEST operating efficiency on every job, heavy or light, is assured by using Yale Spur-Geared Chain Blocks. Made entirely in the Yale Plant to unusually rigid specifications, including the special heat-treated electric steel load chains. Yale Built Chain Blocks are constructed to give the maximum *maintained* efficiency and continuous service under the most trying conditions.



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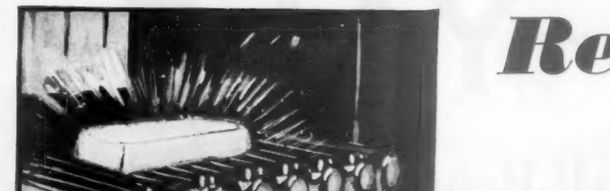


Red Hardness— What Good Is It?

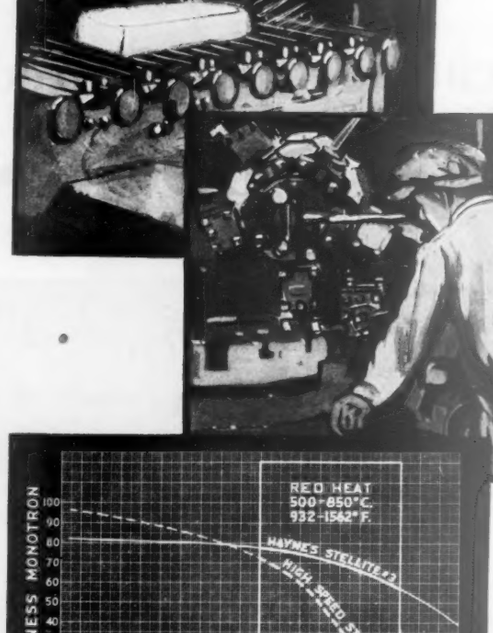
ALL mechanical operations absorb energy and produce heat that is concentrated on surfaces and edges resulting in high local temperatures.

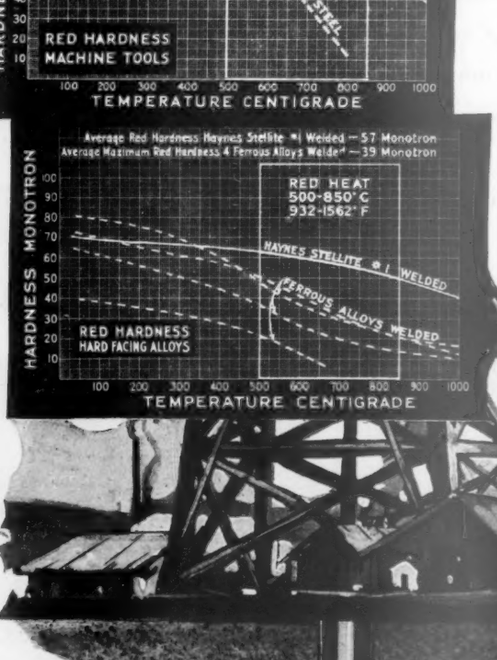
These temperatures are localized in small volumes of metal and may not be visible, but when measured by scientific apparatus, they are often found to be over 900° Fahrenheit. Consequently the *cutting edges and wearing surfaces* of metal cutting tools, pulverizer parts, dipper bucket teeth, grinder rings, oil well drilling tools, and similar machine parts do this work while at a *red heat.*

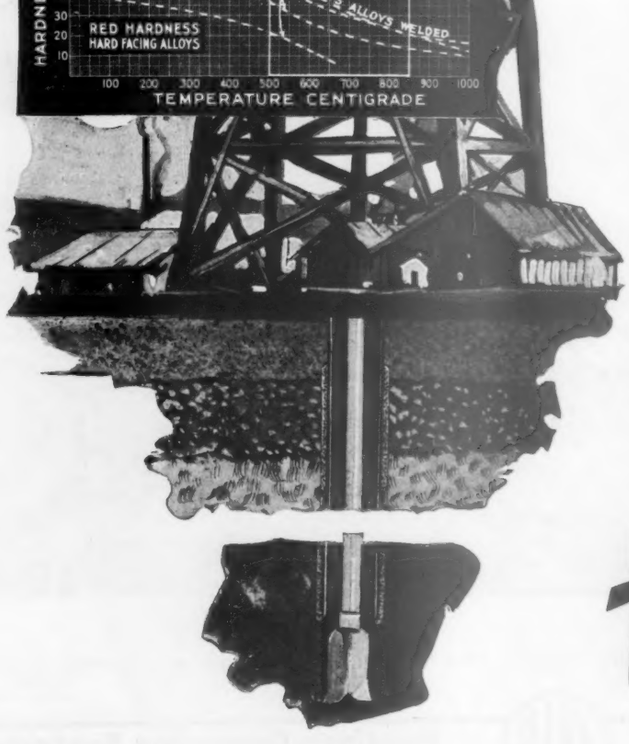
Hardness is of no value unless it is possessed by an alloy when under actual operating conditions. It is RED HARDNESS and not cold hardness that establishes the value of an alloy as a cutting tool or wear resisting material.

RED HARDNESS is only another name for the ability to resist severe abrasion.

[This is the second of a series of three Ads on this interesting subject—watch for the next one]







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Detroit—4-240 General Motors Bldg. Houston—6119 Harrisburg Blvd.
Los Angeles—1310 Santee Street New York—30 East 42nd Street
San Francisco—114 Sansome St. Tulsa—Exchange National Bank Bldg.

General Offices—Kokomo, Indiana

Haynes Stellite welding rod is also available from any of the 28 District Sales Offices of Oxweld Acetylene Company

HAYNES STELLITE

Earl Texas Co.'s No. 8 J. B. Matthews, 165 feet north and 450 feet west of the SE cor. of the NE of Section 32, Block 10, E.T.R.R. Dull-Earl Texas Co.'s No. 9 J. B. Matthews, 465 feet south and 490 feet west of the NE cor. of the SE of the NE of Section 32, Block 10, E.T. R.R. Gibson & Johnson's No. 1 J. J. Simpson, 2,500 feet south and 1,750 feet west of the NE cor. of Section 13, Block 3, H.&T.C. A. J. Hughes and others' No. 3 L. H. Hill, 150 feet north and east of the SE cor. of the SW of the SE of Section 2, Lunatic Asylum Land. Tannehill and others' No. 24 W. P. Newell, 485 feet south and 563 feet east of the SW cor. of the NE 200 acres (square) of Section 11, Block 11, T.&P. VanZant & Eldridge's No. 1 W. J. Dodson, 150 feet north and east of the SW cor. of the SE of Section 1, Blind Asylum Land.

Reagan County

Skelly Oil Co.'s No. 5 University, 2,970 feet north and 1,320 feet east of the SW cor. of Section 33, Block 8, University Land.

Stephens County

Pace & Ward and others' No. 4 G. W. Norton, 1,673 feet south and 1,100 feet east of the NW cor. of Sec. 1,218, T.E. &L. The Texas Company's No. 21 Black Brothers, 818 feet north and 534 feet east of the SW cor. of Section 2,058, T.E.&L. Chastain-Donley & Vacuum Oil Co.'s No. 1 Mrs. B. F. Coody, 750 feet south and 2,640 feet west of the NE cor. of Section 48, Block 5, T.&P.

Upton County

Humble Oil & Refining Co.'s No. 12 R. Ricker, 5,008 feet southeast of the NW line and 150 feet southwest of the NE line of Section 5, M. S. Denton Survey A-127.

Ward County

Cranfill & Reynolds' No. 1 F. T. Robeson, 220 feet southeast of the NW line and 220 feet southwest of the NE line of Section 15, Block 5, H.&T.C.

Wichita County

John Dixon's No. 1 W. H. Chilson, 150 feet south and west of the NE cor. of Section 24, Denton County School Land, League 4, A-417. Hamilton and others' No. 1 M. K. Emmett, 849 feet south and 514 feet east of the NW cor. of the M. K. Emmett 446-acre tract out of the W. M. Anglin Survey A-2. T. F. Hunter's No. 1 J. D. Cooper (A-98), 150 feet north and east of the SW cor. of the E half of Section 3, Hrs. H. Hastie Survey A-98. Magnolia Petroleum Co.'s No. 15 J. W. Donehoo, 150 feet north and 1,227 feet west of the SE cor. of their 80-acre lease out of the J. W. Robertson Survey A-252. F. J. Stump and others' No. 2 W. H. Chilson (Section 9), 450 feet south and 150 feet west of the NE cor. of the south 50 acres of the east 80 acres of Section 9, Denton County School Land, League 4, A-417. Akin & Rayzor and others' No. 6 W. D. McClure-B, 990 feet north and 170 feet east of the SW cor. of their Lease "B" out of Section 5, G.C.&S.F., A-363. Same company's No. 7 W. D. McClure-B, 1,290 feet north and 170 feet east of the SW cor. of their Lease "B" out of Section 5, G.C.&S.F., A-363. Same company's No. 8 W. D. McClure-B, 1,035 feet north and 470 feet east of the SW cor. of their Lease "B" out of Section 5, G.C.&S.F., A-363. Same company's No. 9 W. D. McClure-B, 1,335 feet north and 470 feet east of the SW cor. of their Lease "B" out of Section 5, G.C.&S.F., A-363. Same company's No. 10 McClure-B, 1,040 feet north and 200 feet east of the SW cor. of their Lease "B" out of Section 5, G.C.&S.F., A-363. Same company's No. 11 McClure-B, 1,040 feet north and 200 feet east of the SW cor. of their Lease "B" out of Section 5, G.C.&S.F., A-363. Arkansas Natural Gas Co.'s No. 19 Kemp & Kempner, 750 feet south and 450 feet west of the SE cor. of Block 81, Kemp Wichita Valley Land, and located in Block 82. Comac Oil and Prairie Oil & Gas Co.'s No. 9 M. P. Bishop, 790 feet north and 750 feet west of the SE cor. of the M. P. Bishop tract out of the L. Netherly Survey A-240. Continental Oil Co.'s No. 4 J. L. and T. J. Waggoner-C, 617 feet north and 150 feet east of the SW cor. of Lot 27, H. George Survey A-454. J. A. Dixon's No. 1 W. J. Logan and others, 1,746 feet south and 150 feet west of the NE cor. of Block 34, Kemp Wichita Valley Land. Empire Gas & Fuel Co.'s No. 22 Pierce Oil Corp., 990 feet north and 1,000 feet west of the SE cor. of their 100-acre lease out of Section 9, H.T.&B., A-135. Eureka Production Co.'s No. 15 W. T. Waggoner, 590 feet north and 675 feet west of the SE cor. of their lease out of Section 148, H.&T.C., A-784. Golding-Cochran & Mayfield's No. 10 J. L. and T. J. Waggoner, 450 feet north and 400 feet west of the SE cor. of Lot 22, H. George Survey A-454. Magnolia Petroleum Co.'s No. 7 R. and B. Raming, 1,950 feet south and 1,630 feet west of the NE cor. of Section 4, T.T.R.R., A-656. Producers Drilling Co.'s No. 1 Allen & Kemp-E, 150 feet north and 650 feet east of the SW cor. of Block 28, Kemp Wichita Valley Land. Sheldon & Ven-Mex Oil Co.'s No. 2 C. H. Whittenbach, 150 feet south and 450 feet east of the NW cor. of Section 303, Waggoner Colony Subdivision. Ven-Mex Oil Co.'s No. 20 L. and T. J. Waggoner, 500 feet north and 150 feet west of the SE cor. of Lot 9, Section 2, G.C.&S.F., A-772. J. E. Ward's No. 1 J. L. Powell, 600 feet north and 750 feet west of the SE cor. of Section 21, H.&G.N., A-142.

Wilbarger County

H. Hines and Consolidated Oil Co.'s No. 1 W. T. Waggoner, 150 feet south and east of the NW cor. of the SE of Section 49, Block 4, H.&T.C. Hoover Scientific Development Co.'s No. 1 Waggoner-C, 900 feet south and west of the NE cor. of the W half of Section 21, Block 2, H.&T.C.

Young County

Atlantic Oil Producing Co. and Rogers' No. 1 G. R. Garvey and others, 443 feet south and 1,493 feet east of the NW cor. of Section 1,858, T.E.&L.

PANHANDLE, NORTH CENTRAL AND WEST TEXAS

Week Ended August 21

CORRECTIONS

In Archer County: Gwynn-Boyd Drilling and others' No. 5 A. D. Thompson, 750 feet south and 450 feet east of the NW cor. of Lot 16, Section 20, A.T.N.C.L. Pandem Oil Corp.'s No. 1 W. H. Thomas-C, 150 feet north and 150 feet west of the SE cor. of Lot 4, North Subdivision, Nathan Thomas Survey A-454.

In Eastland County: Prairie Oil & Gas Co.'s No. 1 A. S. Ainsworth, 330 feet north and 990 feet east of the SW cor. of Ainsworth 160 acres out of S. N. Mathais Survey. Sun Co.'s No. 2 Blackwell, 989 feet east and 250 feet south of the NW cor. of Lot 15 McLennan County School Land, League 2. Louisiana Oil Refining Co.'s No. 2 W. M. Sneed, 150 feet south and east of the NW cor. of the south 71 acres of the north 142 acres of Section 30, McLennan County School Land, No. 2. Same company's No. 1 W. M. Sneed, 346 feet south and 150 feet east of the NW cor. of the north 71 acres of the south 142 acres of Section 30, McLennan County School Land, No. 2.

In Pecos County: Mid-Kansas Oil & Gas Co.'s No. 31 I. G. Yates-A, 1,355 feet south and 280 feet west of the NW cor. of Section 59, Block 1, I.&G.N., and located in the I. G. Yates Survey A-8,195. The California Co.'s No. 5 M. A. Smith, Lease 1, Section 21, 330 feet south and 2,340 feet east of the NW cor. of Section 21, Block 194, G.C.&S.F. Same company's No. 1 University Land (Landrem), 800 feet north and 1,065 feet west of the SE cor. of Section 12, Block 18, University Land.

In Shackelford County: Reading-Sedwick & Webb's No. 1 E. S. Dawson and others, 660 feet north and east of the SW cor. of the SW of the NW of Section 173, Block 10, E.T.R.R.

In Stephens County: Lone Star Gas Co.'s No. 2 H. B. Henry, 556 feet north and 660 feet east of the SW cor. of the north 240 acres of the H. B. Henry 320-acre tract out of Section 53, Block 7, T.&P.

In Wichita County: T. F. Hunter's No. 6 Waggoner Brothers-C, 450 feet north and 150 feet east of the SW cor.

OCS
Crank Type Equalizer

(Patented April 6, 1926: No. 1579753. Other Patents Pending)

The Balance for Deep Well Pumping Off or On in 5 Minutes

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WICKWIRE SPENCER UNIFORM WIRE ROPE

of Lot 10, Section 2, G.C.&S.F., A-772. Akin & Rayzor and others' No. 3 W. D. McClure-B, 735 feet north and 475 feet east of the SW cor. of Lease "B" out of Section 5, G.C.&S.F., A-363. Same company's No. 4 W. D. McClure-B, 735 feet north and 425 feet east of the SW cor. of Lease "B" out of Section 5, G.C.&S.F., A-363. Same company's No. 5 W. D. McClure-B, 690 feet north and 152 feet east of the SW cor. of Lease "B" out of Section 5, G.C.&S.F., A-363. Clark & Smith's No. 1 Langford and others, 150 feet south and 1,100 feet east of the NW cor. of the P. P. Langford and others' 357-acre tract out of Section 6, G.C.& S.F., A-734. Clark & Smith's No. 2 Langford and others, 150 feet south and 1,400 feet east of the NW cor. of the Langford and others' 357-acre tract out of Section 6, G.C.&S.F., A-734. Clark & Smith's No. 3 Langford and others, 150 feet south and 1,015 feet east of the NW cor. of the Langford and others' 357-acre tract out of Section 6, G.C.&S.F., A-734.

RAILROAD TESTS LARGE OIL-ELECTRIC ENGINE

(Continued from Page 119)

locomotive were manufactured by the William Beardmore Co. of Glasgow. They exhaust into a boiler which serves as a silencer and which will heat an average passenger train at temperatures as low as 12 degrees below zero.

An oil-fuel boiler will also be used when necessary to heat the train. The Diesel engine is connected to a generator which produces electrical energy which, in turn, is transmitted to motors geared to the axles. To gear the engine direct to the axles would subject the transmission to too great a strain, it is explained. The electrical transmission transforms the intermittent explosions in the oil engine into a continuous drive, and also provides for ready modification of speed and full reversion.

The operation of the 14 Diesel-electric locomotives of smaller type by the Canadian National Railways has resulted in an average operating cost of 30 cents a train mile, against a cost of 75 cents to $1.10 per train mile for steam locomotives.

FUEL OIL SHIPMENTS LESS IN CALIFORNIA

(Continued from Page 119)

11,000,000 bbls. in 1928. The tonnage of Diesel-burning vessels bunkering at California ports during 1928 increased greatly and this also would tend to lower the bunker requirements, since the conversion to Diesel equipment has been known to greatly reduce the consumption of fuel.

The shortage of water power during the latter part of 1928 resulted in a large increase in the consumption of fuel in the generation of electricity. Production of electric power in 1928 by fuels amounted to 14.27 per cent of the total power generated as compared to 10 per cent in 1927. The full effect of this increased use of fuel was not reflected in the consumption of oil, however, as a large portion of the increase in California was taken care of by natural gas, the utilization of which increased from 7,140,371,000 cubic feet in 1927 to 12,849,218,000 cubic feet in 1928. The use of oil in Washington and Oregon increased substantially during 1928, although wood continued to be the principal fuel for the generation of electricity. The total amount of fuel oil used in the five Pacific Coast states in the generation of electricity amounted to 1,835,883 bbls., an increase of 256,268 bbls. over 1927.

The greatly increased supply of natural gas in southern California in 1928 resulted in decreased production of manufactured gas. One gas company which used over 200,000 bbls. of oil in the manufacture of gas in 1927, did not manufacture any gas in 1928, distributing natural gas entirely. However, northern California companies manufactured a greater quantity of gas in 1928 than in 1927, to meet increased demand, so that the total amount of oil used in California to produce gas amounted to 4,997,871 bbls. as compared to 5,201,109 bbls. the previous year. The use of oil as a gas making material may be expected to suffer a decline upon the completion of the gas pipe lines which will make natural gas available in the San Francisco Bay region.

Distribution to cement and lime plants and to the food industries affect the increased activity in these lines during 1928. The increase in demand by food industries was principally due to the large fruit crop and consequent increased pack.

Gas and fuel oil deliveries in Arizona increased in greater proportion than any of the other Pacific Coast states, due to the increase of nearly 1,000,000 bbls. in deliveries to smelters and mines.

CENTRAL WEST FIELDS

(Continued from Page 67)

sand at from 1,793 to 1,817 feet, total depth, 1,817½ feet. Cochran and others drilled a dry hole in a test on the Price E. Wolf farm, Section 3, in the upper Cow Run sand at from 570 to 589 feet, total depth, 590 feet. Hazlett and others are drilling a test on the Bell Spencer farm, Section 11. In Bedford Township, the Ohio Fuel Gas Co. is drilling No. 1-2805 on the William Hunter farm, in fractional Section 18. The same company is drilling No. 1-3510 on the Lanston Archer farm, in Salisbury Township. H. McTaggert and others' No. 6 on the Lydia Rowley farm, Section 13, Scipo Township, is a duster.

In Vinton County, Knox Township, the Co-operative Oil Co.'s second test on the Cameron Clark farm, in fractional Section 5, produced an initial of 20 bbls. in the Berea sand from 1,126 to 1,131 feet.

In Guernsey County, Wheeling Township, the North Salem Oil & Gas Co.'s test on the C. and A. Gray farm, Section 11, is reported at 85 bbls. initial at a total depth of 3,562 feet. Top of lime in this well was found 3,390 feet, lime pay sand from 3,556 to 3,562 feet. Alloway Oil & Gas Co. is drilling No. 5 on the J. O. Alloway farm, Section 10, and Koontz & Lynch made a location for a test on the William T. Lanning farm, Section 13. In Westland Township, the Ohio Fuel Gas Co.'s No. 3-4784 on the John A. Wycoff, Section 20, was dry in the Berea at from 1,232 to 1,307 feet, total depth 1,314 feet, where the hole was filled with salt water.

In Belmont County, Richland Township, Frank Stranges and others have a dry hole in the Berea sand from 1,861 to 1,893 feet, total depth, 1,898 feet, in No. 4 on the Rehn-Overbaugh farm, Lots 34-38. In Somerset Township, W. C. McBride, Inc., has a dry hole in a test on the J. J. Jones, Section 1, in the Keener sand from 1,440 to 1,480 feet, total depth 1,480 feet.

Morgan County

In Morgan County, Marion Township, the Ohio Fuel Gas Co. has a good gas well in No. 1-4732 on the Russell Janes farm, Lot 24, in the lower Berea sand at from 1,573 to 1,596 feet, total depth, 1,600 feet. Skipton Farm Oil Co.'s No. F-16 on the Belinda H. Scoffield farm, was dry in the lower Berea at 1,655 feet. In Malta Township, Rev. David Lang and others' No. 7 on the Jonus Bingham farm, Lot 27, is a light gas well in the lower Berea sand at from 1,542 to 1,565 feet, total depth, 1,568 feet. Ohio Fuel Gas Co. made a location for No. 1-4807 on the W. J. Best farm, also in Lot 27. In Penn Township, the Malta-McConnellsville Gas Co. has a dry hole in No. 6 on the John and Anna Wetherall farm, Lot 36, in the lower Berea at a total depth of 1,666 feet.

Choquill and others got a dry hole in No. 5 on the Edwin Crew farm, Lot 35, in the Peeker sand from 296 to 327 feet. No. 7 is starting on the same farm. In Deerfield Township, Pierce and others are drilling a test on the Ezra L. Allard farm, Section 5. In Union Township, The Patterson Oil Co.'s No. 22 on the Emma Patterson farm, Lot 12, pumped 5 bbls. in the Peeker sand from 80 to 208 feet. Helenic Petroleum & Gas Co.'s No. 1 on the Eva J. Harrison farm, Lot 22, same township, is a good gas well at from 719 to 744 feet.

The Happy Ending of Regulator Problems

You will find the happy ending to back pressure or reducing problems in Neilan Ball Bearing Sensitive Regulators. Sensitive because corrosion and friction are permanently prevented by the use of stainless steel ball bearings, valve stems, and stuffing boxes. Sensitive, also, because long multiple springs provide great flexibility, enabling the slightest change in controlled pressure to produce ample valve travel.

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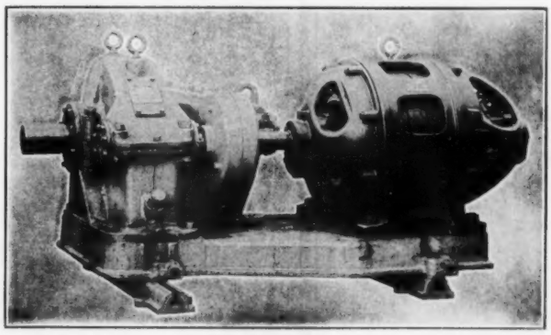

SINGLE-MOTOR rotary drilling is considerably improved when a Westinghouse-Nuttall Type OP-5 gear unit is used for the speed-reducing medium between the motor and the draw works.

The self-contained unit takes the place of a belted countershaft and permits a more compact arrangement because the motor is directly coupled to the unit and is mounted on the same base. As a result, less housing space is required and the equipment is more readily transportable.

The Type OP-5 unit is designed for operation with 75, 100 or 125-hp. motors, and is supplied with ratios of either 3.25:1 or 4.01:1, depending upon the speed of the motor used.

Power is transmitted by BP "tough-hard", heat-treated, herringbone gears which run in a bath of oil in a totally-enclosed, dirt-proof case. Shafts turn on anti-friction roller bearings, and lubrication is provided by a positive splash system.

The OP-5 unit requires no attention except occasional oiling, and the sturdy construction of each part assures dependable, long-life operation.

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WESTINGHOUSE ELECTRIC & MFG. CO.
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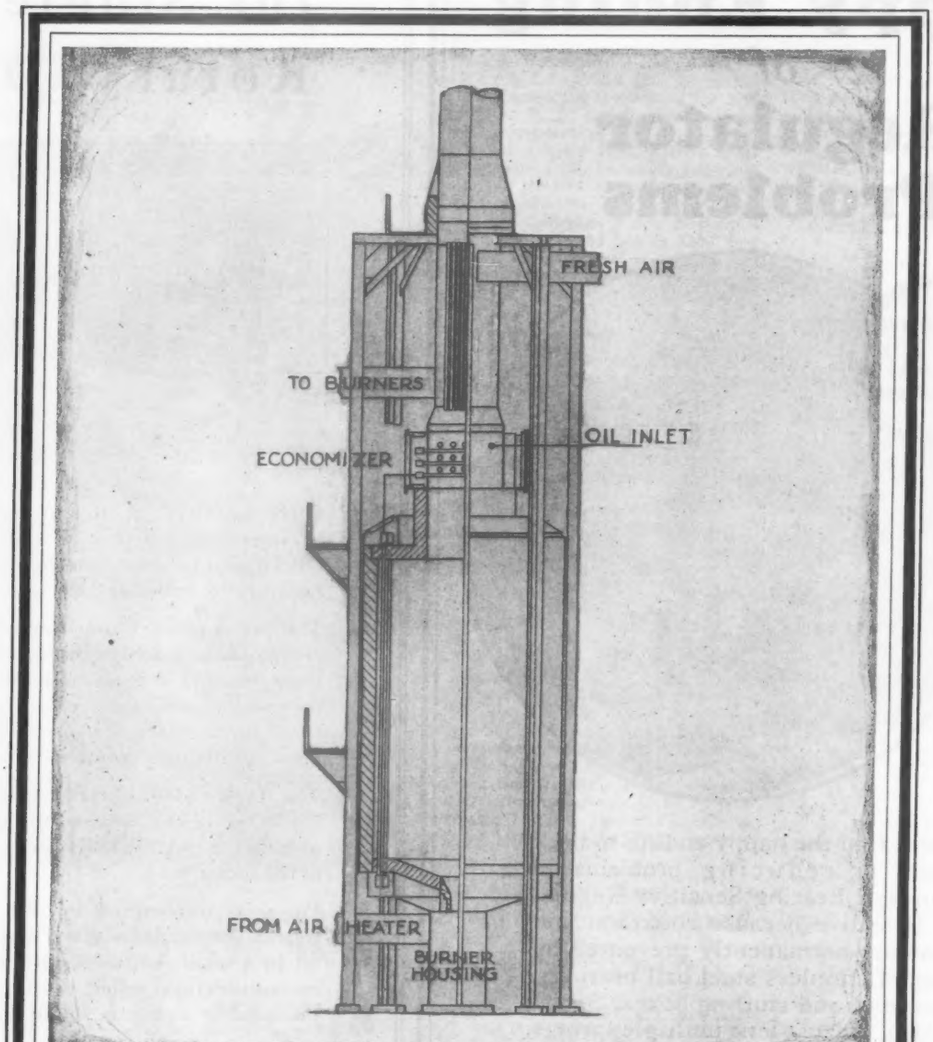

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We are pleased to announce that our service of refinery design, construction and installation now includes these units. Forty-three furnaces of this type are now contracted for or in operation.

The M. W. KELLOGG COMPANY

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HOUSTON, TEXAS, 1514 PETROLEUM BLDG. LOS ANGELES, CAL., 1031 SO. BROADWAY TULSA, OKLA., PHILTOWER BLDG

GROSS CRUDE OIL PRODUCTION IN TEXAS FOR SECOND QUARTER 1929

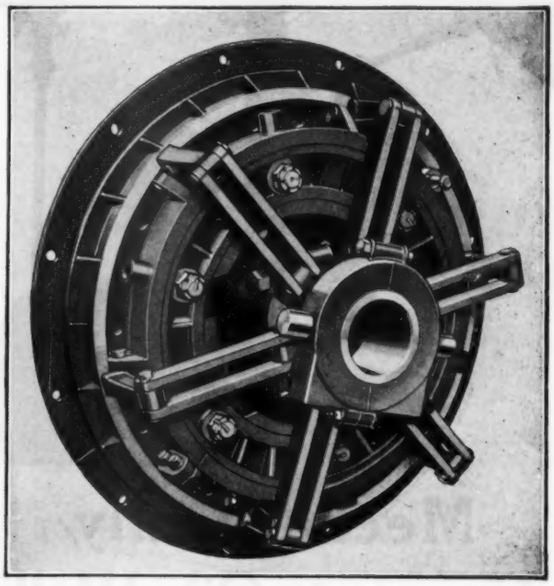
Gross production of crude oil by companies and individuals in Texas during the second quarter of this year, as reported to the state auditor at Austin for taxation purposes, follows:

A

Name and address—	Barrels	Value
Andrews, W. R., et al, Putnam	1,178.91	$1,608.98
Abraham, Earl, Bridgetown	566.43	864.13
Alworth-Stevens-Hild Co., New York, N. Y.	2,832.18	2,345.77
Amarillo Oil Co., Amarillo	2,392.32	2,511.94
Acorn Oil Co., Beaumont	9,703.96	11,815.55
Adamson, Peter, Jr., Tulsa, Okla.	.....	1,087.64
Adamson & Bearman, Cisco	1,886.44	2,811.79
Ailes, O. T., Wichita Falls, (June, 1927 to March 31, 1929)	4,606.78	6,599.40
Ailes, J. W., Wichita Falls	695.00	973.00
Atlas Oil Corp., Humble	2,387.00	2,960.00
Alworth, T. J., Ranger	852.29	1,077.51
Alamo Oil Co., Brownwood	510.00	740.20
Arkansas Fuel Oil Co., Shreveport, La.	19,578.00	29,755.26
Ada Belle Oil Co., Batson	25,142.52	30,782.73
Ama-Gray Oil Co., Amarillo	3,087.08	4,392.54
Alamosa Oil Co., Amarillo	42,322.25	38,162.38
Adams, Dr. W. B., Wichita Falls	470.16	705.24
American Maracaibo Co., New York, N. Y.	355,366.81	323,289.77
American Refining Properties, Wichita Falls	79,274.29	87,364.12
Apple-Brandeberry Oil Co., Wichita Falls	15,998.36	22,337.77
American Refining Properties, Wichita Falls	8,387.79	11,155.70
A. & P. Production Co., Houston	56,672.48	65,731.10
Ashe Syndicate, The, Fort Worth	953.96	1,310.98
Atlas Production Co., Burkburnett	1,804.12	2,383.12
Adams & McGahey & Osborne, Amarillo	1,303.58	844.27
Adams & Prince, Amarillo	20,971.14	27,114.21
Atlantic Oil Producing Co., Dallas	1,249,823.55	1,004,663.50
Ascot Co., Wichita Falls	8,077.18	12,781.93
Abercrombie, J. S., Co., Houston	152,791.04	173,741.82
Aarco Oil & Gas Co., Baltimore, Md.	10,162.28	15,085.61
Associated Oil Co., Tulsa, Okla.	679.02	827.58
American Refining Properties, Wichita Falls, (N. B. Chenault estate)	1,391.93	2,012.85
American Refining Properties, Wichita Falls, (R. M. Waggoner estate)	1,872.49	2,648.14
American Refining Properties, Wichita Falls, (M. J. Bashara estate)	3,453.60	4,922.02
Amerada Petroleum Corp., Tulsa, Okla.	446,897.54	282,110.60
Andrews Petroleum Corp., New York, N. Y.	4,732.89	4,691.30
Alaska Petroleum Co., Amarillo	1,532.62	1,824.13
Antelope Creek Oil & Gas Co., Amarillo	11,151.34	9,033.94
Arco Oil Co., Wichita Falls	16,965.27	17,804.08
Anchor Oil Co., Dallas	944.57	1,263.70
All-American Oil & Gas Co., Oklahoma City, Okla.	42.63	56.34
Atkinson & Sandefer Oil Corp., Breckenridge	12,135.87	15,781.62
Arnold, J. L., et al, Eastland	1,280.55	1,498.81
Artex Oil Co., Wichita Falls	1,499.46	2,123.87
Archer Drilling Co., Wichita Falls	3,397.63	4,950.34
Arab Gasoline Corp., Eastland	384.99	673.73
Adamson, Peter, Tulsa, Okla.	700.00	943.30
Argus Oil Co., Inc., Brownwood	1,043.33	1,174.81

B

Breckenridge Gasoline Co., Toledo, Ohio	None	.....
Bruce, A. D., Brownwood	608.25	778.23
Brownlee-Pope Oil Co., Austin	2,494.88	3,434.72
British American Oil Producing Co., Wichita Falls	6,728.36	9,704.66
Boller, C. W., Wichita Falls	6,469.43	9,306.44
Bowman Oil Co., Rockdale	806.49	1,088.26
Bluebonnet Oil Co., Wichita Falls	991.64	1,427.07
Beams, Drew, Okmulgee, Okla.	1,558.96	2,173.52
Bass & Dillard, Wichita Falls	10,370.74	14,064.27
Bourbon Royalty Co., Dallas	6,015.66	4,217.51
Barnes, J. B., Electra	5,809.96	7,317.07
Baker, James Blair, Jr., and C. F. Camp, trustees, Wichita Falls	6,132.19	8,249.85
Baker, James Blair, Jr., and C. F. Camp, trustees, et al, Wichita Falls	51,358.94	67,551.80
Baker, J. H., Breckenridge	1,092.00	1,419.60
Baker, Mollie B., and Fred R., Breckenridge	1,094.00	1,530.60
Baker, J. A., and Mollie B., Breckenridge	7,063.00	9,181.90
Bailey, Fannie, Wichita Falls	1,154.99	1,666.05
Byrd & Golston, Brownwood (October 1, 1928 to March 31, 1929)	7,465.00	11,719.05
Boysen, B. S., et al, Brownwood	700.00	630.00
Best, M. C., Albany	635.29	712.85
Bohner, C. F., Kansas City, Kans., (March)	64.65	81.92
Markley, Gholson, et al, Ranger, (March)	103.17	133.11
Baker Brothers, Brownwood, (Aug., 1928, to March 31, 1929)	1,200.00	1,134.00
Breeding & Hutson, Rising Star, (March)	1,283.45	1,919.77
Brown & Lickey, Wichita Falls (Oct., 1928 to March 31, 1929)	520.00	728.53
Briggs, R. F., C. O. Smith & T. C. Steiner, Corsicana	72.52	90.44
Burton, McKee Oil Corp., Strawn	None	.....
Bulcher Oil & Gas Co., Gainesville	None	.....
Blue Bonnet Petroleum Corp., Somerset	858.95	973.72
Borman, F. J., Cisco, (March)	929.31	1,188.62
Borealis Oil Co., Oklahoma City, Okla.	3,529.38	5,241.68
Bullington, Lee Pendleton & Bullington, Wichita Falls	13,474.83	19,196.52
Bullington-Clark, et al, Wichita Falls	5,676.16	6,301.57
Britton & Gordon, Strawn	891.00	1,045.55
Benedum-Trees Oil Co., Pittsburgh, Pa.	38,636.30	34,772.67
Beggs, Geo. Strip, Fort Worth	2,392.49	3,091.62
Barkley & Meadows, Fort Worth	3,281.80	4,177.16
Bexata Oil Co., San Antonio	1,402.77	1,605.60
Big Lake Oil Co., Pittsburgh, Pa.	1,156,287.26	1,421,785.26
Black Diamond Oil Co., Amarillo	921.05	977.21
Bohner, C. F., Kansas City, Kans.	93.24	118.41
Black, W. A., Midland	930.83	1,005.30
Brooks & Hanlon, Inc., Tulsa, Okla.	612.14	804.55
Burris, Joe D., et al, Cross Plains	1,260.00	1,673.20
Burton, C. P., et al, Wichita Falls	26,261.41	36,913.41
Bynum, W. W., estate, Rockdale	1,010.23	1,343.17
Big Indian Oil & Development Co., The, Gainesville	1,091.58	1,560.96
Bowers Oil Co., A Trust Association, Vernon	1,216.32	1,666.58
Bynum & Palmer, Rockdale	162.12	221.20
Butler, F. E., and E. R. Perkins, Olney	936.64	1,310.64
Buttram Petroleum Corp., Oklahoma City, Okla.	45,902.97	70,705.83
Bril, William N., Van Ormy	32.00	38.56
Biggs Oil & Gas Co., McKinney	950.00	1,442.55
Baird Oil Co., Putnam	200.22	256.12
Bailey, Carl B., Wichita Falls	7,011.30	10,291.02
Barbara Oil Co., Oklahoma City, Okla.	5,750.14	9,160.85
Bridwell Oil Co., Wichita Falls	30,972.52	39,422.37
Bridwell & Heydrick, trustees, Wichita Falls	1,920.69	2,886.93
Boardman and Ulrich, Rice	947.78	1,270.00
Brown, A. J., Fort Worth	1,562.00	2,030.60
Burns, L. T., Wichita Falls	39,382.42	57,675.93
Bartlett, William, & Co., Electra	236.52	346.39
Bashara, M. J., & Sons, Wichita Falls, (March)	3,857.00	4,465.00
Bashara, M. J., & Co., Wichita Falls	2,070.00	2,306.24
Brownwood Producing & Refining Co., Brownwood	1,194.97	1,586.41
Baldwin, F. C., et al, Fort Worth	2,139.12	3,257.13
Broderick & Calvert, Fort Worth	320.20	486.80
Beaver Oil Corp., Oklahoma City, Okla.	8,769.84	9,775.15
Blair & Kell, Dallas	665.47	776.00
Burkburnett Production Oil Trust, Baltimore, Md.	527.80	790.34
Bartlett Production Co., Rockdale	1,004.51	1,382.89
Bridwell & Mayfield, Wichita Falls	5,870.55	8,020.40
Braden Co., The, Eastland	2,182.22	3,336.75



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TWIN DISC CLUTCH COMPANY
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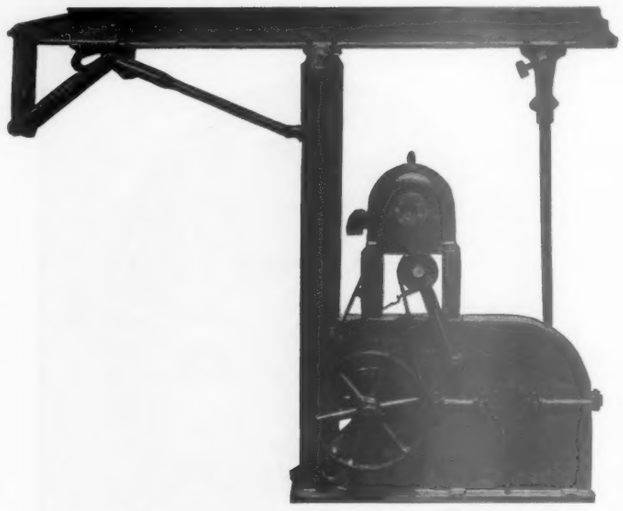

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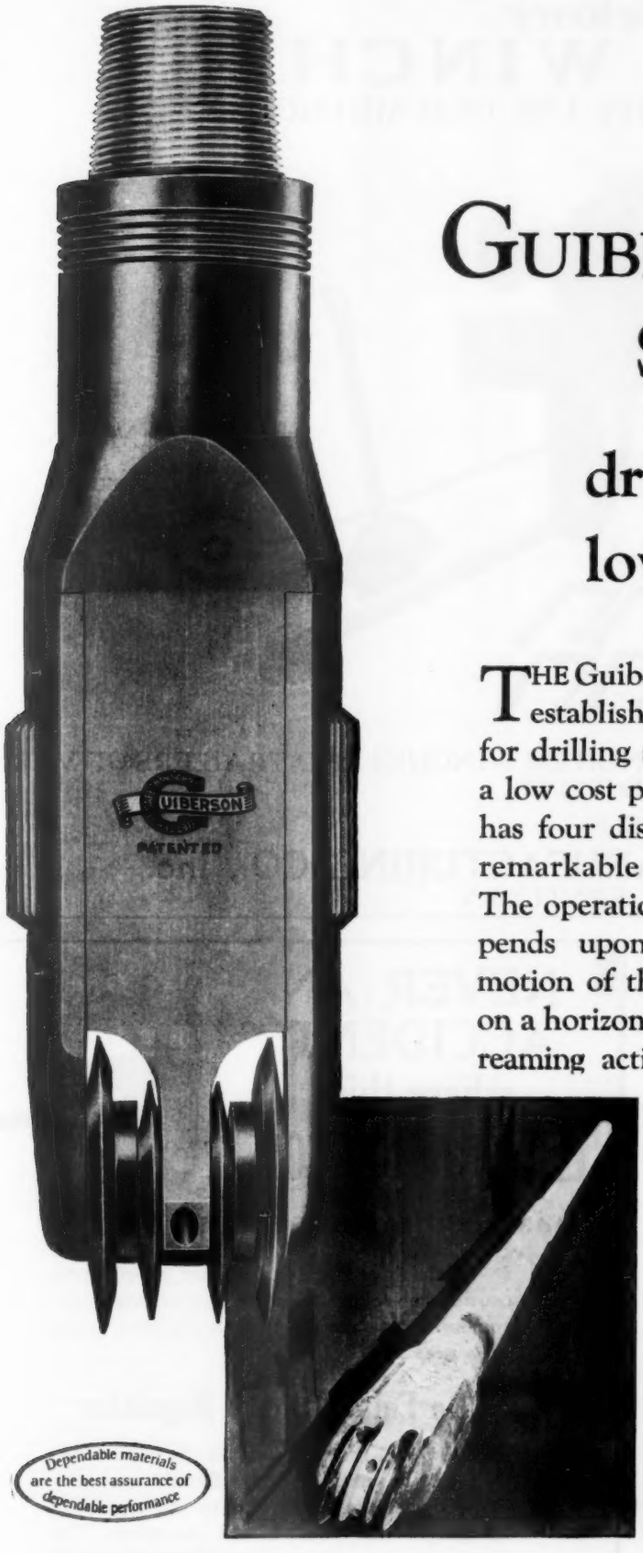
Fabricated with "H" Beam for Sampson Post and Walking Beam.
Toggle made from steel casting.
Interchangeable bronze bearings throughout.
Cut gears running in oil.
Patented cam motion keeps polish rod in alignment at all times.
Can be used to pump from one to three wells.

Stork Engineering Company

Saginaw, Michigan, U. S. A.

Name and address—	Barrels	Value
Big State Oil Corp., Dallas	372.77	459.74
Badger Oil Co., Amarillo	12,225.95	14,483.20
Bashara, J. F., Houston	6,554.45	8,179.67
Bell, E. S., Wichita Falls	479.94	665.90
Bradstreet, L. G., Co., Fort Worth	33,940.53	50,008.74
Brown Farm Oil Co., Wichita Falls	7,399.77	11,222.29
Bailey, Fannie, Wichita Falls	259.16	385.20
Burk-Greis Oil Co., Tulsa, Okla.	2,587.58	3,862.61
Baker & Pardue, Breckenridge	2,268.35	3,213.84
Bell Oil & Gas Co., Tulsa, Okla.	29,112.44	31,291.17
Brannon & Murray, Cisco	4,451.71	6,594.14
Breeding & Hutson, Rising Star	1,040.71	1,644.70
Brady Brothers, Minerva	1,141.72	1,526.56
Barnsdall Oil Co., Tulsa, Okla.	35,853.32	45,996.74
Black Cat Oil Co., Electra	824.76	1,131.09
Brown, Mrs. Carrie L., et al, Orange	18,689.23	23,284.62
Brown, Dr. E. W., estate, Orange	871.45	1,105.12
Beverink, A. H., et al, Henrietta	1,639.03	2,214.79
Barkley, Gholson, et al, Ranger	405.90	550.28
Barkley & Conway, Ranger	8,855.06	14,186.98
Beasley Production Co., Electra	1,041.40	1,707.48
Barkley & Crotty, Ranger	5,005.50	6,943.38
Barkley, Crotty, Six and Little, Ranger	894.60	1,150.31
Brazos River Gas Co., Wichita Falls	225.31	375.48
Brown & Guinn, Wichita Falls	375.00	558.45
Bohner, Crenshaw & Whitehill, Burkburnett	6,643.36	8,793.99
Bohner, C. J., et al, Burkburnett	15,055.88	21,314.54
Brown & Lickey, Wichita Falls	1,453.40	1,982.69
C		
Caudle, Fifer, Rockdale	318.00	486.54
Cockrell, McIlroy Oil Co., Inc., Amarillo	154,098.19	204,080.54
Carey, E. S., et al, Wichita Falls	640.68	813.66
Carey, E. S., et al, Wichita Falls	169.22	187.83
Central Oil Co., Cameron	3,542.30	4,140.53
Collins, J. L., & Co., Corsicana	751.98	1,015.10
Clark, R. R., Wichita Falls	15,504.71	22,788.18
Crenshaw, Albert, Wichita Falls	1,913.82	2,764.70
Curry, E. M., Cross Plains	912.18	1,378.50
Curtis, James A., Wichita Falls	1,736.86	2,549.94
Cuno, Mrs. Bertha, Moran	1,417.28	1,836.61
Carson, Usher, Laredo	3,086.02	2,709.53
Culbertson Co., Wichita Falls	12,159.21	17,998.22
Cushing Refining & Gasoline Co., Cushing, Okla.	8,045.74	6,278.36
Clem Oil Co., Houston	355.88	355.88
Cable, Joe H., Wichita Falls	1,064.83	1,493.25
Caldwell, John W., Wichita Falls	239.00	313.44
Cooper, O. R., Ranger, (March)	2,658.64	3,510.40
Currie Oil Corp., Washington, D. C., (March)	790.90	1,164.14
Cezeaux & Martin, Humble (September, 1928)	5,141.78	6,168.17
Cook, R. H., Electra (Oct., 1928 to March 31, 1929)	403.56	566.72
Chandler, G. B., Jacksboro, (year 1928)	2,947.96	3,537.55
Central Texas Refining Co., Corsicana	16,712.50	22,121.10
Clarkson, William, Jr., Corsicana	3,085.91	4,309.45
Crabb & McNeel, San Angelo	1,188.60	1,571.98
Craig & Lowrie, Pittsburgh, Pa.	1,501.40	1,720.46
Cornhusker Oil Co., Lincoln, Neb.	1,986.55	1,680.01
Connell-Sixson-Frazier, Eldorado, Kans.	1,559.87	1,887.44
Columbia Petroleum Co., Mirando	7,589.12	6,455.16
Chapman, O. H., Waxahachie	191.56	224.63
Chenault, W. L., Amarillo	578.95	849.98
Canyon Oil & Gas Co., Inc., Cross Plains	1,345.28	2,074.04
Camp Oil & Gas Co., Wichita Falls	1,198.06	1,710.96
Cox, Edwin B., Ardmore, Okla.	2,453.33	3,486.36
Cunningham, E. J., et al, Coleman	15,841.58	17,833.75
Chandler, G. B., Jacksboro	868.35	1,042.68
Church & Weekley, Fort Worth	26,251.81	19,875.91
Continental Oil Co., Wichita Falls	576,472.88	728,514.90
Cunningham & Bratcher, Loving	4,942.50	5,892.15
California Co., Dallas	1,507,015.00	1,207,357.65
Camel Oil Co., Pampa	7,083.32	8,994.57
Cole Petroleum Co., Laredo	41,675.12	35,137.69
Coffield & Hale, Rockdale	1,870.58	2,487.87
Conner, Son & Cloughley, Gotebo, Okla.	9,307.46	13,705.79
Cromwell, Carl G., San Angelo	8,784.53	6,721.51
Corpus Christi Oil Co., Corpus Christi	434.59	347.67
Cole, W. C., Wichita Falls	1,908.28	2,758.69
Clear Lake Oil Co., Rockdale	1,185.92	1,561.21
Cashdollar & Snyder, Brownwood	260.32	322.79
Canary, S. C., et al, Tulsa, Okla.	524.98	756.53
Callihan, George, and Carter Development Co., Albany	966.00	1,216.20
Conway Brothers & Gholson, Ranger	124.94	181.17
Conway Brothers, Ranger	2,225.38	3,655.42
Conway Brothers & Champion, Ranger	2,097.43	2,559.34
Conway Brothers and Woodson Oil Co., Ranger	1,530.16	2,061.40
Caruthers Co., San Antonio	1,646.17	1,807.80
Cranfill Brothers Oil Co., Wichita Falls	4,904.61	7,389.75
Cosden Oil Co., Fort Worth	359,903.21	312,591.90
Continental Supply Co., St. Louis, Mo.	427.23	527.94
Cisco Oil Co., Tulsa, Okla.	25,896.53	32,152.74
Crosbie, J. E., Inc., Tulsa, Okla.	15,098.44	16,115.32
Corsicana Oil & Refining Co., Corsicana	30,600.00	21,720.27
Crown Central Petroleum Corp., Houston	54,149.30	45,790.89
Curley & Newell Oil Co., Burkburnett	215.84	317.30
Crown Oil & Refining Co., Houston	12,986.12	16,210.86
Cullen, H. R., et al, Houston	12,647.58	14,537.30
Cullen and West Production Co., Houston	433.42	498.43
Chapman, P. A., estate, Waxahachie	13,976.08	18,477.32
Culbertson Brothers Co., and Corvette Oil Corp., Fort Worth	7,789.35	5,213.86
Cosden, J. S., Inc., Fort Worth	4,474.55	6,023.71
Clay, J. D., Houston	1,404.54	1,638.71
Cranfill Brothers Oil Co., Dallas	133,819.95	94,106.36
Charter Oil Co., Brownwood	20,031.90	30,053.12
Campbell, Alma, Fort Worth	1,246.71	1,763.32
Collier, J. W., and E. Mabel, Markley	295.64	356.24
Champlin Refining Co., Enid, Okla.	51,055.65	58,275.15
Cranfill & Reynolds, Cisco	304,152.56	316,105.93
Clark-Buffalo Oil Co., Buffalo, N. Y. (to March 31, 1929)	19,782.02	23,577.05
Clark-Buffalo Oil Co., Buffalo, N. Y.	4,777.16	4,953.80
Christie Brothers, Wichita Falls	7,580.59	10,975.42
Carey, C. W., Wichita Falls	4,099.28	5,443.84
Carter, Roy I., Wichita Falls	18,017.60	16,329.67
Coppock & Coleman, Iowa Park	13,265.00	20,304.65
Currie Oil Corp., Washington, D. C.	707.35	940.78
Cosa Oil Co., Cisco	236.16	368.06
Center Field Oil Co., Amarillo	363.33	294.29
Capitol Oil Co., Orange	1,177.44	1,432.72
Castlebury, S. A., Vernon	210.42	220.94
Crosscut Corp., Fort Worth	1,197.23	1,741.35
Chestnut & Smith Corp., Tulsa, Okla.	6,621.14	9,206.03
Consolidated Oil Co. of Texas, Wichita Falls	59,443.04	80,736.65
Carlin & Tobin, Ranger	628.00	998.52
Carlin, W. W., Ranger	676.00	1,081.60
Clark, C. W., Wichita Falls	60.32	90.48
Cohen, Aaron, Baltimore, Md.	6,767.89	10,472.23
D		
Davis, Caroline A., Somerset	343.47	376.83
Dixie Drilling Co., Fort Worth	95.40	138.43
Dixon Creek Oil Co., Inc., Amarillo	77,990.92	78,438.40
Dunlop, Robert, Ponca City, Okla.	9,759.45	14,706.72
Douglas Oil Co., Tulsa, Okla.	1,804.02	1,796.66
Dorian, R. P., Wichita Falls	16,797.04	23,053.92
Danciger Oil & Refining Co. of Texas, Fort Worth	171,867.02	237,262.32
Duke-Langford Oil Co., Wichita Falls	5,226.13	4,180.90
Dayton Oil Co., Dayton	None	.....
Dudley Oil Gas Development Co., Abilene	12,491.30	18,737.06
Developers Oil & Gas Co., Wichita Falls	799.00	1,065.13
Davidson, Robert, et al, Corsicana	900.00	1,242.00
Deaner, J. J., Okmulgee, Okla.	2,589.58	3,536.84



Guiberson disc bit with discs, axles and reamers of Nickel Molybdenum Steel, manufactured by THE GUIBERSON CORPORATION, Dallas, Texas.

GUIBERSON *Nickel Alloy Steel Disc Bits*

drill dependably at a lower cost per foot!

THE Guiberson disc bit has established a reputation for drilling straight holes at a low cost per foot. This bit has four discs which afford remarkable cutting speed. The operation of the bit depends upon the wobbling motion of the discs rotating on a horizontal shaft and the reaming action of the side reamers which clean the hole true to size.

In order to withstand the severe service encountered in heavy drilling operations, the discs, axles and reamers of the Guiberson disc bit are made of Nickel Molybdenum Steel. The uniformly high hardness, toughness and strength of these Nickel Alloy Steel parts assure the dependable performance of Guiberson drilling equipment.

Probably the most impressive evidence of the uniformly dependable mechanical properties of Nickel Steel parts is the fact that practically all manufacturers of airplane engines, both in America and Europe, have adopted Nickel Alloy Steels for highly stressed parts, the weight of which must be pared to a minimum.

Information on the properties and applications of Nickel Alloy Steels will be gladly furnished by our staff of engineers.

SEND FOR "BUYERS' GUIDE TO NICKEL ALLOY STEEL PRODUCTS"

Nickel
FOR ALLOY STEEL

NATIONAL METAL EXPOSITION — CLEVELAND PUBLIC AUDITORIUM — WEEK OF SEPT. 16 — 1929 — 21ST — OUR NATIONAL METAL WEEK

INCO NICKEL THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y. INCO NICKEL

Old Hickory

KINGHAM WINCHES

"IN THE POWER AGE WHY USE OLD METHODS?"

Made in Three Sizes

For Motor Trucks

WRITE FOR CATALOG OF COMPLETE LINE KINGHAM WINCHES AND TRAILERS OF VARIOUS SIZES AND TYPES

MADE BY

KENTUCKY WAGON MANUFACTURING CO., Inc.

LOUISVILLE, KENTUCKY

STANDARD OIL ISSUES

CARL H. PFORZHEIMER & CO.

(Specialists in Standard Oil and Miscellaneous Oil Securities)

25 Broad Street New York, N. Y.

NEVER AN ACCIDENT where this GF REGULATOR has been installed

It is absolutely essential that safety precautions be taken where houses or small consumers of gas are supplied from lines under high pressure.

The Fulton House Regulator

was designed for this purpose. It is provided with an automatic cut-off. Should any accident happen to the line or to the regulator, no danger can result to the consumer. The Automatic cut-off provides automatic safety —*real safety!* For this reason, there has never been an accident where a Fulton Regulator has been installed.

Write for our catalogue. Also for booklet containing directions for setting and operacting all types of gas regulators. Gas men will find it of value.

THE CHAPLIN-FULTON MFG. CO.

28-40 Penn Avenue Pittsburgh, Pa.

Name and address—	Barrels	Value
Dale & Crawford, Electra	667.99	948.63
Dale Oil Corp., Wichita Falls	2,703.10	4,003.49
Draper & Sanders, Burkburnett, (back tax)	.....	44.28
Deutser, B., trustee, Beaumont	3,097.13	3,890.64
Dunigan, et al, Pampa	1,400.68	1,553.37
Duffield & Howard Oil Co., Tulsa, Okla.	486.27	592.37
Dalton, Jack, Oil Co., Fort Worth	1,871.66	2,630.45
Douglas Brothers Oil Co., Electra	2,856.83	4,218.41
Dorothy Oil Co., Eastland	453.18	650.71
Douglas Production Co., Electra	1,766.75	2,486.02
Davis, Louise Reyman, Tulsa, Okla.	57.85	57.25
Dull Earle Texas Co., Albany	48,231.53	67,119.37
Darby Petroleum Corp., Tulsa, Okla.	4,770.84	5,560.42
Dillon & Glasscock Co., San Antonio	522.51	558.42
Dominion Oil Co., Tulsa, Okla.	1,319.64	1,797.28
Dyck Oil Co. of Texas, Tulsa, Okla.	683.56	536.75
Double Five Oil Co., Amarillo	1,737.82	1,928.55
Dean Oil Co., Burkburnett	827.35	1,100.38
Dixie Oil Co., Inc., Shreveport, La.	84,481.60	61,655.28
Devonian Oil Co., Tulsa, Okla.	25,295.45	28,710.17
Dittman Drilling Co., Fort Stockton	452.88	461.56
Deering, John A., Houston	10,046.44	13,058.23
Dudley, G. S., Iowa Park	1,591.66	2,545.41
Dale-Knotts Oil Co., Wichita Falls	293.81	420.38
Dallas Petroleum Co., Houston	398.80	621.99
Dennis, J. S., Moran	1,727.90	2,302.80
Dunaway, J. E., et al, Wichita Falls	9,752.83	14,211.62
Dunigan Brothers, Breckenridge	540.52	642.08
Delmar Oil Co., et al, Bartlesville, Okla.	25,878.55	35,352.38
Derby Oil Co., Wichita, Kans.	15,395.27	24,245.48
Derby Oil Co., Wichita, Kans.	5,646.10	6,225.30
Derby, A. L., and E. A. Haines, Wichita, Kans.	7,185.23	7,524.23
Derby, Haines & Williams, Wichita, Kans.	2,081.96	2,129.78
Duquesne Oil Corp., Eastland	236.20	357.90
E		
Engel, E. A., Albany	20,831.00	31,064.50
Ewno Oil Corp., Abilene	629.50	767.61
Easter Oil Corp., Wichita Falls	20,593.38	29,130.20
Empire Gas & Fuel Co., Bartlesville, Okla., (Mo)	402,100.61	485,858.17
Eubanks, R. O., and B. K., Cross Plains	1,442.86	1,910.62
Ewing, G. W., Breckenridge, (4-1-27 to 3-31-29)	6,954.55	8,922.43
Ellis & DuDose, Fort Worth	1,067.41	1,315.71
Electra Production Co., Inc., Electra	995.36	1,436.96
Eddy Oil Co., Beaumont	562.40	685.09
East Batson Oil Co., Batson	16,243.63	20,225.41
Erie Investments, Ltd., of Texas, Toronto, Canada, (Rockdale)	524.00	681.20
Erickson, Selma E., Wichita Falls	86.53	125.04
Ernest Oil Co., Rockdale	276.38	359.29
Ellis & Lancaster, Beaumont	426.18	537.66
Easton, E. S., Wichita Falls	1,540.63	2,228.12
Eggers, J. E., trustee, San Antonio	551.58	631.38
Eastland Oil Co., Fort Worth	116,911.32	135,634.33
Eddleman & Payne, Inc., Wichita Falls	9,568.92	14,298.68
Emrick & Wallace, Minerva	301.42	416.60
Ellis & Anderson, San Antonio	114.61	131.75
Eubanks, R. O., & B. K., Cross Plains	872.99	1,246.34
F		
Farish & Ireland Lease, Houston	6,735.77	8,415.48
Fort Ring Oil & Gas Co., Fort Worth	228.79	336.51
Fort Bend Oil Co., Houston	17,890.02	22,294.47
Fort Bend Oil Co., et al, Houston	21,701.13	24,983.68
Fultz, W. B., et al, Graham, (4-4-28 to 3-31-29)	604.78	801.90
Fultz, W. B., et al, Graham, (Allen lease) (7-16-28 to 3-30-29)	1,780.08	2,588.16
Finley, Knox, Wichita Falls (4-1-25 to 6-30-28)	11,270.87	23,177.77
Fuchs, Fritz, Taylor	72.81	105.57
Fountain Production Co., Saratoga	1,930.29	2,438.56
Fultz, W. B., et al, Graham	6,726.86	9,886.76
Fresno Oil Co., Wichita Falls	31,590.26	45,174.07
Freeman-Hampton Oil Corp., ("B"), Wichita Falls	879.48	1,307.61
Freeman-Hampton Oil Corp., ("A"), Wichita Falls	4,891.80	7,178.25
Freeman, J. H., Wichita Falls	7,336.04	10,585.32
Fox & Adams, Burkett	13,652.50	15,722.84
Foster, Rebout, Sullivan & Elrod, San Angelo	5,131.67	6,562.37
Foster, Elrod & Tucker, San Angelo (2-17 to 6-30-29)	1,352.56	1,822.60
Franklin, Wirt, Ardmore, Okla.	823.32	1,204.87
Forster, A. R., Coleman	370.80	523.81
Ferguson, W. R., Wichita Falls	447.65	625.33
Four Oil Co., Wichita Falls	2,309.81	3,152.37
Farlyn Oil Co., Houston	13,307.43	9,562.56
Fisher, J. A., Wichita Falls	1,150.11	1,694.35
Frontier Oil Co., San Antonio	9,975.00	12,422.02
Flynn, W. B., Beaumont	6,081.94	7,510.10
Fleming and Kimbell, Sherman	4,115.79	3,320.28
F. H. E. Oil Co., Sherman	18,792.16	25,990.49
Falls Production Co., Wichita Falls	5,474.34	7,811.14
Fain-McGaha Oil Corp., Wichita Falls	478,951.11	664,126.73
Freeborn & Sargent, Cisco	5,084.19	7,520.53
Flynn, Thomas Y., Wichita Falls, (Back tax)	.....	158.83
Fogle Oil Co., Minerva	1,405.00	1,860.00
G		
Gunn Production Co., Cross Plains	1,333.00	1,733.00
Gulf Production Co., Houston	7,594,007.29	7,424,363.73
Golding & Cochran, Wichita Falls	35,449.56	51,401.56
Golding, Dudley S., Wichita Falls	10,031.67	13,041.17
Gultex Production Co., Waxahachie	2,269.24	2,395.54
Green, James H., & Co., Inc., Brownwood	812.49	1,110.41
Godley Oil & Gas Co., Dallas	28,692.92	29,699.30
Gaither Production Co., Rockdale	763.96	1,031.64
Grass Roots Oil Co., Fort Worth, (7-10-28 to 3-31-29)	3,985.07	5,418.63
Glasscock, Lonnie, Big Spring	18,078.92	13,974.43
Gilbert Co., Beaumont	7,313.34	9,146.55
Gray, G. M., et al, Coleman, (10-1927 to 3-21-29)	1,628.00	1,944.00
Grayback Development Corp., Wichita Falls	4,894.62	7,128.83
Greene Production Co., Fort Worth	40,660.57	46,412.00
Gladis Oil Co., Saratoga	3,166.00	3,312.91
Glenridge Oil Corp., St. Louis, Mo.	3,537.20	4,515.36
Glass Brothers, Rockdale	722.78	950.27
Gates-Bacon-Lea, Wichita Falls	5,931.42	8,039.41
Gholson, John M., Ranger	11,196.87	15,582.43
Ginter Jones Oil Co., San Antonio	512.73	604.70
Ginter Lange Oil Co., San Antonio	1,249.19	1,633.24
Grady, D., et al, Electra	673.61	936.71
Grady, Dan, Electra	537.25	817.57
Gwynn-Boyd Drilling Co., Wichita Falls	5,304.75	7,239.91
Gwynn, P. F., et al, Wichita Falls	1,278.07	1,947.87
Gwynn, P. F., Wichita Falls	4,205.85	6,228.80
Gibson & Cardwell, Wichita Falls	700.15	1,067.89
Graham & Lash, Cisco	898.62	1,167.06
Gilman and Conway Brothers, Ranger	4,627.27	7,313.92
Gandy & Peyton, Wortham	3,349.93	4,287.04
Gates Oil Co., Ardmore, Okla.	3,332.03	5,246.90
Gardner, Wilson & McCaldin, Wichita Falls	1,012.83	1,488.11
Gallagher & Lawson, Desdemona	503.98	714.93
Gilliland, C. W., Wichita Falls	3,378.44	4,798.87
Glasscock, Leon D., San Antonio	1,453.28	1,684.81
Gilliland-Rosser Oil Co., Wichita Falls	27,603.82	40,310.53
Goldeline Oil Corp., Oklahoma City, Okla.	8,769.14	9,775.15
Gray, K. C., lease, Vernon	460.99	556.36
Gilman & McMurray, Cisco	4,252.10	6,752.43
Green & Owens, Brownwood	1,248.35	1,899.68
Gray, K. C., lease, Vernon	471.64	630.49
G. & K. Production Co., Fredericksburg	1,266.13	1,451.81
Gopher Oil Co., Amarillo	1,013.58	938.96
Granite Oil & Gas Co., Ridgway, Colo.	457.62	682.51
Grayburg Oil Co., San Antonio	243,300.21	184,377.99
Gates Oil Co., Littleton, Colo.	4,364.85	4,567.75

Powell Valves

IT is unnecessary to recount the virtues of Powell Valves to experienced oil and gas engineers. Years of efficient, dependable performance have definitely established their worth in every class of service.

Fig. 375
"White Star" Gate Valve

Did you receive your copy of our Oil Well, Field and Refinery Catalog?

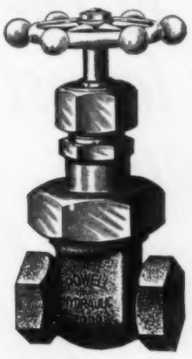


Fig. 178
Hydraulic Gate Valve

Fig. 460
"Pilot" Gate Valve

Powell Valves are particularly adapted for handling volatile and hazardous liquids and gases.

The fundamental superiorities of Powell Valves and appliances—including design, foundry practice, careful processing and accurate testing—insure uniform products. Collectively, these fundamentals account for the striking popularity of Powell Valves.

Booths Nos. 41 and 42
Scientific and Technical Building

POWELL PRODUCTS

Valves of Bronze, Iron and Steel in Globe, Angle, Cross, Check, Gate and Safety patterns. Also Oilers, Lubricators, Grease Cups, Water and Oil Gauges, Whistles, Whistle Valves, etc.

THE WM. POWELL CO.
2521-2531 Spring Grove Ave.
CINCINNATI, OHIO

"Our Customers are very well pleased with your Turnbuckles,"

Says one of the Industry's largest supply houses.

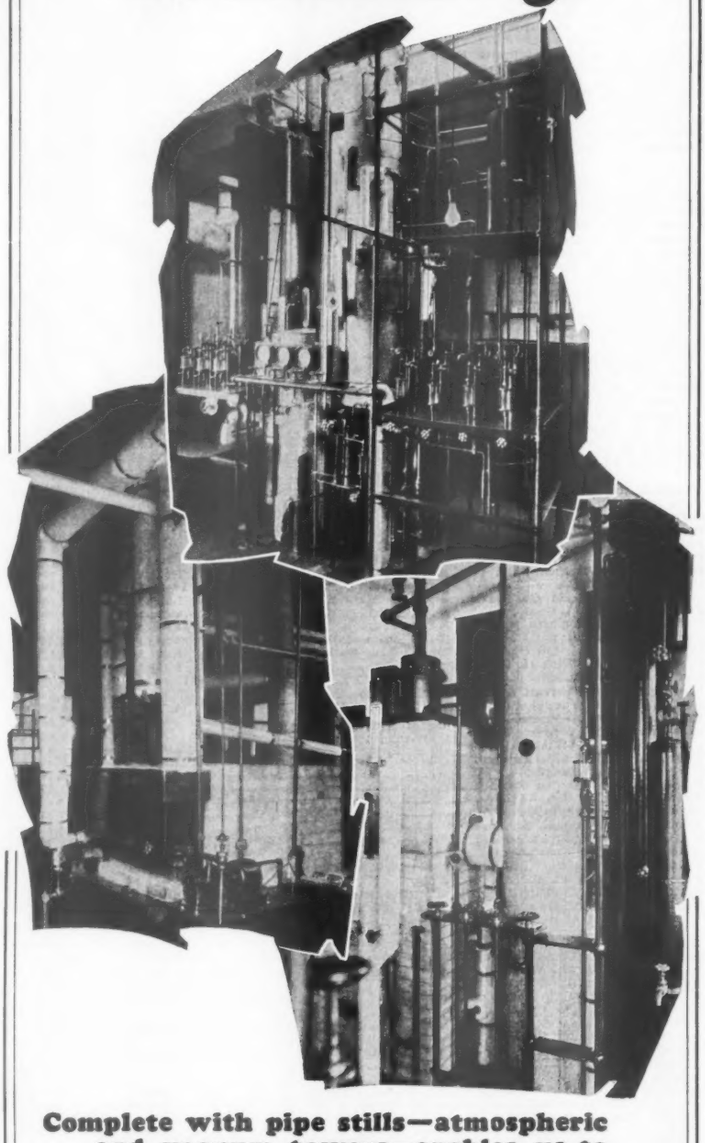
The following is an extract from a letter recently received from one of the four largest supply houses in the oil industry:

"Our customers are very well pleased with your Turnbuckles and the service Fort Worth has been giving us on our orders is much better than we can obtain elsewhere."

Designed especially for the oil-industry, NOR-BRO Turnbuckles have all the strength, all the ruggedness and all the operating efficiency that oil industry needs demand. Quality considered, the prices are very low — thanks to efficient shop practice and large volume. The same type of service that our Fort Worth branch has been giving to the supply company whose letter is quoted above, is also available from Robinson, Illinois, Tulsa, Oklahoma, and Owensboro, Ky. Your orders, addressed to Norris Brothers, Inc., at any one of these three points will be shipped at once from stock.

NORRIS BROTHERS
TURNBUCKLES Made Especially for the Oil Industry

A 20 Barrel Lummus Refinery



Complete with pipe stills—atmospheric and vacuum towers—enables us to process your crude as a preliminary to our design of a plant to meet your requirements.

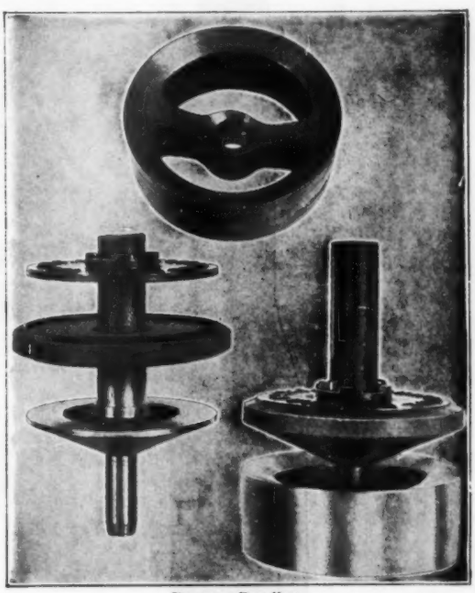
Lummus Petroleum Refineries

THE
WALTER E. LUMMUS CO.
148 State Street BOSTON, MASS

Name and address—	Barrels	Value
Gray & Adams, Inc., Gainesville	1,673.21	1,783.49
Guthrie, Cole & Ferguson, Wichita Falls	765.32	1,039.00
Grayce Oil Co., Wichita Falls	21,169.47	29,867.27
Godfrey, F. L., Enid, Okla.	76.71	106.57
Galvez Oil Corp., Tulsa, Okla.	5,045.68	6,873.40
Group No. 1 Oil Corp., Big Lake	496,234.98	738,465.26
Gordon Oil Co. of Texas, Logan, Ohio	78.54	99.09
Gardner Brothers & Collins, Wichita Falls	42,315.54	59,335.38
Gainesville Oil & Developing Co., Gainesville	472.90	543.58
Golden West Oil Co., San Antonio	31,363.43	34,788.52
Gwinnup, H. G., Fort Worth	377.84	561.18
H		
Hamilton & Martin, Wichita Falls	1,773.46	2,482.84
Hart Oil Corp., Fort Worth	628.08	907.96
Hemisphere Oil Corp., New York, N. Y.	34,796.19	44,950.66
Home Oil & Gas Co., Inc., Albany	1,799.09	2,088.02
Humble Oil & Refining Co., Houston	6,323,670.90	7,024,809.04
Hunter, T. F., Wichita Falls	8,901.72	12,243.60
Hutton Oil Corp., Cisco	8,143.46	9,338.52
Rhodes & Highers, Breckenridge	5,945.39	8,162.05
Hamilton, W. L., Burkburnett	569.57	942.55
Heidrich, E. C., Jr., Amarillo	1,785.33	2,126.23
Hanover Co., Inc., The, Wichita Falls	5,486.47	7,328.27
Houston Production Co., Houston	13,713.07	16,567.64
Houston Oil Co. of Texas, et al, Houston	126,835.79	109,236.43
Houghland Production Co., Dallas	4,343.45	5,157.01
Holloway, R. R., receiver, Brownwood	1,488.37	2,306.97
Hobbs, Henry, Wichita Falls	4,313.40	6,272.93
Helvetia Oil Co., San Antonio	12,362.07	14,040.26
Harrison Oil Co., Houston	35,682.40	50,964.62
Hall, Ira W., Brothers, Brownwood (6-30-24 to 12-31-27)	7,935.00	12,537.30
Hueco-Ranger Oil Co. (Mch.), El Paso	292.95	357.98
Hutchinson, Frank, Archer City (Nov., 1928 to Mar. 31, 1929)	1,476.03	1,764.16
Hynds Oil Co., Cheyenne, Wyo. (10-18-27 to 3-31-29)	3,076.16	5,269.45
Harris & Bryan, Eastland	214.00	306.02
Hemisphere Oil Corp., New York, N. Y. (March)	37,151.46	45,629.72
Harris & Bryan, Eastland (3-31-28 to 3-31-29)	501.52	728.97
Harbin, Wiley, and others, Eastland (9-1-28 to 3-31-29)	2,814.81	3,571.75
Hawley, J. A., guardian, Ottawa, Ontario, Canada	206.66	267.83
Hueco Ranger Oil Co., El Paso	218.04	280.96
Hambleton, George, San Antonio (March)	451.58	498.07
Harris, Jodie P., Albany (11-25-28 to 3-31-29)	3,496.60	4,504.25
Hepburn Oil Co., Brownwood (1-1-26 to 12-31-28)	7,216.00	10,690.00
Hooker, G. E., Breckenridge (11-20-25 to 4-25-28)	6,283.63	14,639.70
Hooker, G. E., Breckenridge (10-1-26 to 12-31-28)	6,819.00	11,557.58
Hamer & Jennings, Wichita Falls (2-1928 to 3-21-29)	1,620.75	2,470.22
Hodges, S. G., Brownwood (8-1928 to 3-31-29)	1,200.00	1,134.00
Hall, Ira W., Brownwood (1-1928 to 3-31-29)	3,745.00	4,793.60
Heist, M. D., Putnam (12-31-23 to 3-31-29)	27,460.90	35,703.61
Hyer, Fred, Fort Worth (8-1-28 to 3-31-29)	2,957.29	2,365.83
Hickey, T. J., et al, Corsicana	58.07	79.51
Hawkins, W. L., Wichita Falls	2,531.90	3,656.82
Hammond, J. G., Fort Worth	206.56	283.25
Hyer, Fred, Fort Worth	71,721.36	62,181.73
Howard, Duffield & Berlin, Tulsa, Okla.	1,267.96	1,528.86
Hedrick-Camp Drilling Co., Wichita Falls	2,539.75	2,874.28
Hemby, J. M., Electra	1,227.17	1,789.41
Hampton & Wilson, Wichita Falls	153.24	179.26
Handrick, A., Moran	193.00	215.67
Hughes, William K., trustee, St. Louis, Mo.	939.08	1,265.52
Howard Petroleum Corp., Tulsa, Okla.	725.53	888.27
Hitchman & Howard, Inc., San Antonio	2,490.16	3,033.99
Herrogan Oil Corp., Pampa	28,544.00	34,978.22
Hines, Harry, Wichita Falls	9,488.61	14,449.26
Hardie, J. M., & Co., Sour Lake	511.26	648.80
Harvey, R. A., Houston	460.00	498.34
Hobson & Vorhees, San Antonio	680.13	832.45
Howell, M. L., Lohn	912.04	1,240.37
Hammon & Heyser, Wichita Falls	20,882.88	29,701.01
Hammon, W. H., Wichita Falls	45,053.76	68,724.73
H. B. J. Oil & Gas Trust, Baltimore, Md.	2,333.19	3,615.57
Harwell, E. P., Tulsa, Okla.	5,194.44	8,830.54
Hoppes, W. T., Burkburnett	360.09	613.84
Hobbs Oil Co., Tulsa, Okla.	1,882.46	2,591.60
Humphreys Corp., Houston	206,604.65	240,617.56
Humphreys Brothers, Inc., Houston	2,345.52	3,357.51
Hughes, J. K., Oil Co., Mexia	22,935.56	30,699.00
Hill & Dowell, Batson	11,419.78	14,268.69
Horn, T. W., Houston	4,755.37	5,987.21
H-Y Oil Co., Inc., Fort Worth	10,930.98	15,298.10
Hamilton, Walter R., trustee, San Antonio	5,335.87	6,895.84
Hyde Production Co., Houston	4,082.37	5,070.01
Hyde, George, Houston	3,825.52	4,270.39
Homaokla Oil Co., Oklahoma City, Okla.	4,041.41	5,441.85
Houston Gulf Gas Co., Houston	32,027.45	26,991.37
Huber, J. M., Co. of La., Inc., Breckenridge	3,562.43	3,178.44
Halmack Oil Co., Dallas	331.47	524.64
Hoffman & Page Co., Eastland	9,532.80	14,183.56
Hutchinson, Frasa, Archer City	699.06	948.32
Hill, W. R., trustee, Burkburnett	193.38	300.10
Heist, M. D., Putnam	1,551.96	2,233.12
Hardy Oil Co., Wichita Falls	2,446.66	3,640.95
Hodges, F. M., Wichita Falls	375.44	546.41
Herbert Oil Co. of Texas, Fort Worth	4,426.84	6,108.86
Hinson, G. D. and R. V. Tidwell, Graham	5,423.18	7,345.44
Holmes, Huey & Holmes, Amarillo	2,860.00	4,576.00
Holmes Brothers, Amarillo	2,598.19	2,806.04
Holmes & Huey, Whittenburg	1,865.69	2,004.94
Harris & Simons, Tulsa, Okla.	8,915.70	5,509.28
Hanlon Gasoline Co., Tulsa, Okla.	1,463.52	1,876.56
Hickok Producing & Development Co., Toledo, Ohio	2,700.33	3,700.37
Hope Oil & Gas Co., Fort Worth	11,779.44	15,923.96
Hefley, McIntosh & Thomas, Cameron	649.29	844.59
Holbrook & Woods, Wichita Falls	31,389.69	42,967.57
Hi-land Oil Co., Wichita Falls	11,699.42	18,075.34
Hughes, J. K., Developing Co., Mexia	1,475.60	1,646.20
Hamon, Jake L., Ardmore, Okla.	13,660.77	19,960.19
I		
Independent Oil & Gas Co., Tulsa, Okla.	368,240.72	283,944.05
Illseng Production Co., Fort Worth	437.61	589.23
Irick Oil Co., Waskom	187.32	230.40
Idaho Oil Co., San Antonio	1,193.32	1,425.16
Infield Petroleum Co., Austin	859.54	1,044.97
J		
Jones, W. A., Minerva	706.19	839.37
Jones, J. E., Wichita Falls	1,249.48	1,853.28
Jones, J. F., et al, Abilene	260.00	345.95
Johnson & Fraser, Wichita Falls	53,344.26	77,576.53
Junior Oil Co., Houston	1,302.34	2,012.45
Justin Oil Corp., et al., Wichita Falls	9,954.50	15,077.09
Jones, Edwin M., El Dorado, Ark.	13,157.37	17,822.97
Jones, J. A., Moran	383.00	591.95
Jones, Hugh, Burkburnett (1926 to Oct. 1, 1928)	7,384.22	10,837.25
Jones, J. F., et al., Abilene	6,047.57	10,018.79
Johnson, D. O. (E. Wilson lease), Wichita Falls (7-1-28 to 3-12-29)	15,412.84	23,109.31
Jones, C. A., Strawn	176.50	254.16
Janellen Oil Co., Tulsa, Okla.	208.70	271.81
Jackson, T. H., Sipe Springs (March)	88.38	109.01
Jackson, T. H., Sipe Springs	115.01	144.51
Jackson, J. S., trustee, Sour Lake	3,941.26	4,947.94
James, Tom, Albany	6,512.54	9,278.85
Jacob Oil & Gas Co., Graham	None	None
Jackson Co., San Antonio	1,166.30	1,368.39
Judson Oil Co., Tulsa, Okla.	7,266.09	10,709.95
Julia Oil Co., Sour Lake	3,145.80	3,953.78
J. H. L. Oil Co., Midland (3-12-29 to 6-30-29)	11,162.13	8,929.70

Great Compliments

are paid MacClatchie Valves by other valve manufacturers



Patents Pending

Patents Pending . . . The MacClatchie Manufacturing Co. pioneered the mud pump valve of the design shown above, and it was not surprising that a device so readily adapted by operators was soon imitated. Other manufacturers realized that the simplicity and efficiency of the MacClatchie valve was responsible for its sudden popularity.

Sales grew until today *there are more MacClatchie valves used than any other make.*

Purchasers of MacClatchie valves are now assured that they are buying the original valve of this design, and the valve which has the greatest patent protection, for this company now has several applications filed at the Patent Office, and these will be allowed at an early date. If you standardize on MacClatchies you can feel certain that you will never have to change, and that you will have no trouble in replacing parts.

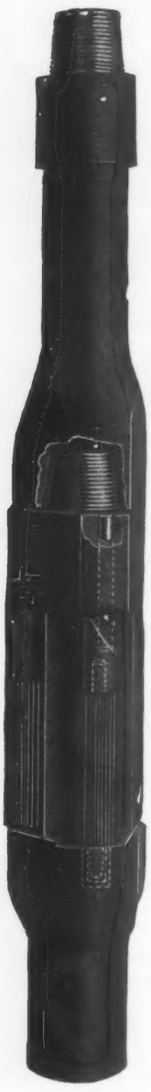
Sold by Continental Supply Stores in the Mid-Continent

MacCLATCHIE MANUFACTURING CO.

COMPTON - - - - - - - - CALIFORNIA

In foreign fields they use

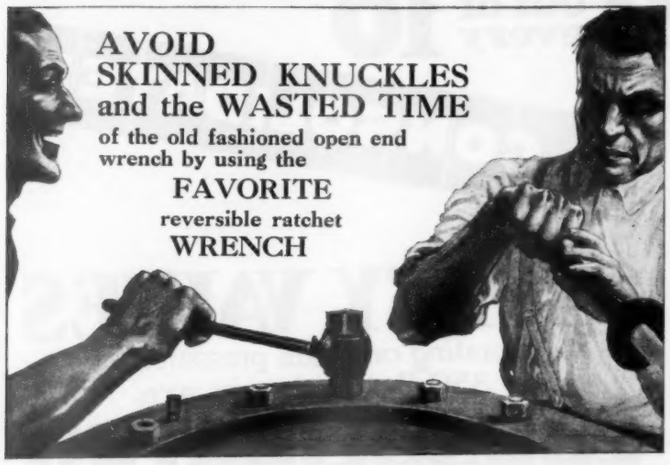
MacClatchie Under-reamers—easily operated—easily repaired



If you operate in California, our rental department will provide you with an under-reamer—we will deliver by air if necessary. If you operate in foreign fields or anywhere outside of California, choose the field man whose opinions you respect most highly, and undoubtedly he will tell you of the hours of reaming time saved, and of the simplicity of operation and construction of the MacClatchie Rotary Under-reamer. Write for new leaflet just off the press.

MacCLATCHIE MANUFACTURING CO.
COMPTON - - - CALIFORNIA

Name and address—	Barrels	Value
Jonray Oil Co., San Antonio	1,022.48	1,086.28
Jones, Hugh, Burkburnett	3,048.94	3,048.94
Japhet Production Co., Houston	5,492.51	5,377.00
Johnson Brothers, San Antonio	6,959.58	8,584.95
K		
Kansas City, Mexico & Orient Railway Co., Wichita, Kans.	12,242.67	7,947.74
Kemrow Co., Wooster, Ohio	13,395.20	19,703.96
Kewanee Oil & Gas Co., Titusville, Pa.	256,376.93	364,554.41
Kurz Oil Co., Somerset	463.81	459.71
Kimmell & Woofter, Wichita Falls	1,629.28	2,586.81
Kerr, T. P., Corsicana	597.85	810.55
Kershaw, L. R., Muskogee, Okla.	998.13	720.11
Kent, G. C., Corsicana	20,286.51	26,818.81
Kavanaugh Petroleum Co., Houston	3,185.17	4,348.51
Kelly, George L., trustee, Wichita Falls	11,467.75	19,813.34
Kansas City, Mexico & Orient Ry. Co., Wichita, Kans. (March)	14,946.90	9,715.48
Kohlman, Richard, Iowa Park (March)	650.00	750.16
Kieffer, R. J., San Antonio (4-1926 to 3-31-29)	6,729.09	9,842.67
Kimbell & Bostic, Burkburnett	4,420.23	5,790.50
Kirby Petroleum Co., Houston	30,419.22	24,473.96
Kahle, Gracey & Diver, Bridgeport, Ill.	4,257.27	3,018.64
King, Anna B., Muskogee, Okla.	283.57	240.06
Kleinfelder, B. F., Breckenridge	443.84	654.36
Keen & Woolf Oil Co. (Newton & Lillie), Shreveport, La.	19,049.74	23,787.30
Kelly, George L., trustee, Wichita Falls	398.01	543.84
King Royalty Co., Wichita Falls	90,303.13	130,305.11
Keck Investment Co., Los Angeles, Calif.	6,676.00	4,680.04
Killam, O. W., Laredo	65,004.30	54,774.19
Kleiner, Charles J., Cisco	15,270.40	21,278.11
Kirk & Evans, W. L. Holmesley, trustee, Gorman	1,812.40	2,480.13
Keystone Production Co. of Texas, Fort Worth	3,560.41	5,205.86
King & Daniel, Wichita Falls	5,860.58	8,787.22
Keller, J. E., Iowa Park	329.14	439.88
Kate Bell Oil Co., Dallas	1,034.48	1,537.95
Koenig, Max W., Oakland, Calif.	20,711.93	17,554.50
Kohlman, Richard, Iowa Park	614.00	902.58
Klemcke, George, trustee, Von Ormy	1,760.17	1,860.40
Kokoma Petroleum Co., Gorman	731.50	1,101.34
Kistler, Frank E., & Co., Littleton, Colo.	4,309.90	3,807.87
Keener Oil & Gas Co. of Texas, Tulsa, Okla	1,601.52	6,500.54
Kaufman, L., San Antonio	594.91	621.19
Knotts, F. F., Wichita Falls	610.98	897.61
Klop, C. F., Electra	35,292.87	48,236.11
Kay, A. W., receiver, Jones et al, Graham	1,311.69	1,843.01
Kuhlemeier-Kleiner Oil Co., Cisco	673.96	876.15
King, R. A., trustee, Wichita Falls	4,814.10	3,966.82
L		
Leonard Oil Co., Somerset	212.44	241.39
Leonard, George, Somerset	914.59	980.50
Little Caddo Syndicate, Fort Worth	1,286.24	1,875.20
Loggie & Arendt Oil Co., Albany	2,115.00	2,653.71
Lomas, Thornton, Jr., Wichita Falls	2,813.86	3,923.05
Lutex Oil, Inc., Austin (to 2-1-29)	24,456.00	27,443.40
Lytle, C. F., Mexia	10,935.29	13,930.87
Lewis Production Co., Pittsburgh, Pa.	53,678.59	73,072.66
Larkin, W. B., Wichita Falls	295.66	427.55
Levy & Evans, trustee, Fort Worth (6-1-27 to 3-31-29)	4,014.79	6,022.18
Lobban, J. L., et al., Electra (11-1-28 to 3-31-29)	248.11	337.35
Lambert, Trout & Duke, Wichita Falls (7-1-28 to 3-31-29)	1,409.76	2,066.19
Lefors Petroleum Co., Lefors (3-31-29)	62,821.13	73,855.36
Lackey, W. G., Tulsa, Okla.	2,562.87	3,407.19
Linedo Oil Co., Lincoln, Neb.	1,749.76	1,620.95
Lee, Homer, Wichita Falls	1,585.07	2,404.88
Last Chance Gas Co., Pampa	2,622.59	2,643.50
Lloyd Oil Corp., Fort Worth	17,583.76	22,858.88
Lowry Oil Corp., Wichita Falls	5,082.89	7,298.20
Lockhart & Co., Los Angeles, Calif.	56,982.62	63,255.97
Lewis, J. E. et al, Eastland	960.90	1,321.78
Lewis, J. E., & Co., Eastland	3,281.67	4,584.47
Lefors Petroleum Co., Lefors	67,889.52	83,717.68
Louisiana Oil Refining Corp., Shreveport, La.	101,758.66	89,446.33
Letwin & Lippitt, Breckenridge	10,970.44	15,034.79
Lake View Oil Co., Sour Lake	12,631.00	15,801.12
Lone Star Gas Co., Dallas	17,113.15	25,203.89
Lesh, John L. & Co., Wichita Falls	8,725.65	6,338.91
Leiser-Rochmill Production Co., Fort Worth	1,803.50	2,110.78
Lion Oil Refining Co., El Dorado, Ark. (4-10 to 6-30-29)	1,108,377.45	859,713.21
Loewenstein Oil Co., Rockdale	1,143.53	1,534.30
Lee & Scott, Inc., Houston	337.53	439.10
Landreth Production Corp., Fort Worth	6,274.55	8,298.23
LaSalle Petroleum Co., Tulsa, Okla.	5,765.08	7,865.47
Larson, Edwin, Los Angeles, Calif.	21,098.42	28,205.99
Lea & Daniel, Wichita Falls	3,779.73	5,149.35
Long, C. B., Wichita Falls	232.84	315.78
Lake Graham Oil Co., Houston	3,168.70	4,116.51
Lawson, Eugene B., Tulsa, Okla.	51,951.92	70,483.28
Lesh, Kilcrease & Co., Nocona	2,556.36	2,352.40
Lowe, Delaney & Carter, DeLeon	158.06	209.87
Lesh & McCall, Nocona	21,840.59	15,725.22
Lucey Petroleum Co., Dallas	359.29	501.76
Lamb, George E. and L. E. Shaw, Brownwood	27.17	42.12
Little, William, Breckenridge	298.42	396.59
Lebow, C. H., Tulsa, Okla.	1,164.39	1,766.40
Levy, Leonard M., trustee No. 2, Fort Worth	1,411.73	2,189.45
Levy, Leonard M., trustee No. 1, Fort Worth	2,874.52	4,575.76
Levy & Evans, trustee, Fort Worth	186.84	288.22
Mc		
McNallen, A. J., et al, Breckenridge	2,428.30	3,211.27
McMurray, J. L., et al, Cisco	2,147.41	3,221.26
McMurray, Root & Rhodes, Eastland	1,153.00	1,910.00
McDaniel Oil Corp., Cisco	5,088.16	7,939.36
McMan Oil & Gas Co., Tulsa, Okla.	686,653.97	662,286.63
McDonald & Campbell, et al, Dallas	3,588.40	5,090.44
Macknoid Co., San Antonio	200.88	222.15
McLean, Marrs, Beaumont	31,494.69	32,518.61
McFall, J. M., Wichita Falls	907.64	1,322.98
McChesney, Nancy, Olney	4,878.61	6,221.96
McIlroy Oil Co., Inc., Amarillo	49,079.22	46,580.06
McCarty Oil Co., Wichita Falls	73,171.51	110,769.51
McCarter, R. C., Cisco	195.92	250.98
McHugh, C. E., Graham	740.22	1,080.57
McLean, Marrs, Beaumont (March)	33,344.01	33,344.01
McLean, Marrs, Beaumont (December)	20,250.08	23,393.10
McLester, Jerome, Eastland (7-1-27 to 3-31-29)	12,947.19	19,483.21
McNadeau, A. J., et al, Breckenridge (9-1-27 to 3-31-29)	19,722.30	26,804.20
McCort, H. C., receiver, Fort Worth (3-31-28 to 3-31-29)	1,436.98	1,917.85
McCormick & Noack, Rockdale	69.52	100.80
McDonald, M. C. and A. C., Putnam	8,718.25	12,585.59
McNallen & Griffin, Tulsa, Okla.	5,749.23	7,821.54
McCall, C., trustee, Nocona	818.13	944.35
McNamara Oil Co., Beaumont	1,838.46	2,292.63
McLester Oil Co., Breckenridge	2,284.00	3,313.34
McGraw Oil Co., Tulsa, Okla.	1,453.97	1,847.47
McJunkin, Florence T., et al, Tulsa Okla.	490.26	787.21
McCutcheon, C. E. (Petroleum Pro Co-op.), Wichita Falls	990.12	1,382.70
McCrary, E. W., Tulsa, Okla.	4,625.90	6,007.21
McBride, W. C., Inc., St. Louis, Mo.	6,040.28	7,732.73
McCutchen, C. E., trustee, Wichita Falls	8,917.69	12,716.67
McLester Oil Co., Eastland	12,015.47	20,504.56
McGinley-Sigler Co., Fort Worth	182.00	129.70
M		
Moore, F. L., trustee, Tulsa, Okla.	2,455.04	3,410.20
Midwest & Gulf Co. of Texas Trust Est., Tulsa, Okla.	1,364.49	1,573.89
M. & V. Oil Co., Wichita Falls	4,114.09	5,943.30
Murchison Oil Co., Dallas	217,529.60	163,629.93
Mills Bennett Production Co., Houston	131,234.51	150,510.13



The open end wrench wastes time when it is removed from the nut at every part turn, to say nothing of the number of times it slips off the nut.

The socket form of the "FAVORITE" Reversible Ratchet Wrench head cannot slip off the nut, and its quick ratchet movement turns the nut like lightning. None of the quarter turn and a fresh hold of the old-fashioned wrench.

Once on the nut the "FAVORITE" stays there until it is seated or removed.

The "FAVORITE" Wrench does away with the lost motion of nut turning.

BUILT STRONG FOR ROUGH USAGE

Why plug away with the old fashioned wrench?

Write for full particulars.

GREENE, TWEED & CO.

Sole Manufacturers

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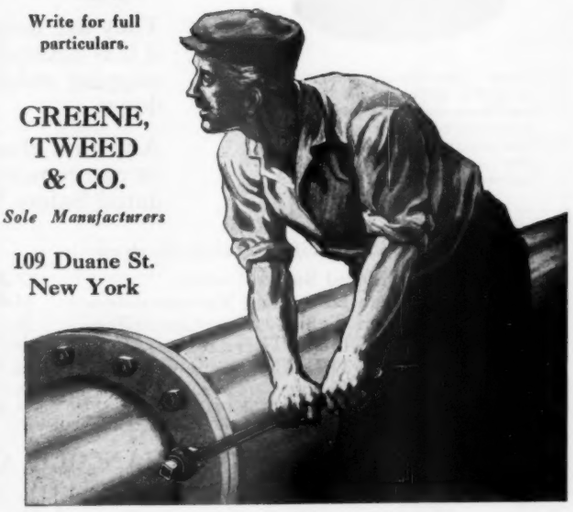

VALVES
PIPE FITTINGS
FIRE HYDRANTS

KENNEDY

EVERY KENNEDY Valve design, whether for drilling service, refining operations, or pipe line control, is based on over 50 years of experience in meeting the constantly developing problems of valve requirements. In all that time, no Kennedy Valve type has ever had to be withdrawn because of faulty design—a striking proof of the uniform excellence of Kennedy products and your security in standardizing on them.

The large line of Kennedy Products includes globe and angle valves up to 750-lb. working oil pressure, gate valves up to 2500-lb. test pressure, standard malleable iron fittings, bronze fittings, and cast iron flanged fittings and flanges. Ample stocks are maintained by wholesalers for immediate delivery, and the manufacturing facilities of two large plants assure prompt shipment of orders for unusual requirements.

Send for the Kennedy Catalog.

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WAREHOUSES: New York, 128-132 White St.; Chicago, 1335-1337 So. Clinton St.; San Francisco, 448-450 Tenth St.

SALES OFFICES: New York, Philadelphia, Cleveland, Chicago, Atlanta, Salt Lake City, El Paso, Los Angeles, San Francisco, Seattle.

G. & B. Pipe Sealing Compound

GILBERT & BARKER
Pipe Sealing Compound
FOR GASOLINE AND OIL PIPING
DIRECTIONS
Be sure threads are perfect and wiped clean. Apply compound to male threads only and make joint up tight. If compound becomes too thick it may be thinned by adding a little shellac. Use compound only for gasoline and oil piping, never on water steam or similar piping.
GILBERT & BARKER MFG. Co.
Springfield, Massachusetts, U.S.A.

...makes Tees and Elbows permanently tight

TEES and elbows — trouble-making joints in gasoline and oil lines — are made permanently leak-proof with Gilbert & Barker Pipe Sealing Compound.

Easily applied to all joints when the line is installed, G. & B. Pipe Sealing Compound hardens just quickly enough. Forms a lasting, oil-proof seal, prevents seepage. Makes the oil and gasoline stay in the pipe where it belongs. Joints sealed with G. & B. Pipe Sealing Compound are as permanent as the line itself.

Gilbert & Barker Pipe Sealing Compound comes in cans of three sizes: ⅛ pint for 15¢, a handy size for the tool kit; pint for 75¢, a good size for general shop use, and quart for $1.45, the size to keep on hand for supply.

Make certain that all threads are clean. Spread G. & B. Pipe Sealing Compound on the male threads *only*. Make the joint up tight, and you'll have a tight joint permanently.

GILBERT AND BARKER MANUFACTURING COMPANY
PUMPS AND TANKS FOR THE OIL TRADE
SPRINGFIELD, MASS.

Visible Gasoline Pumps, mechanical measure or sight measure, hand or air operated, equipped with the famous NULTRA *bowls. Also piston type pumps with visible discharge. Pump and tank outfits for motor oils, including the popular* "NARRO-LUBE" *type. Special pipe sealing compound for gasoline and oil pump and tank installations.*

9 out of every 10 ALL OTHERS CONSOLIDATED

SAFETY VALVES

operating on steam pressures of 350 lbs. and over are

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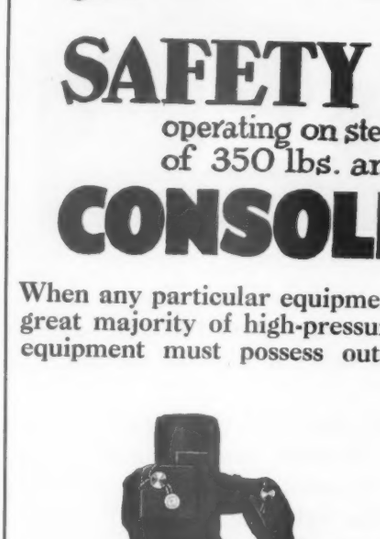
When any particular equipment is selected to protect the great majority of high-pressure boilers of a nation, that equipment must possess outstanding characteristics of operating dependability and satisfactory maintenance.



Every Consolidated Safety Valve is tested under actual operating conditions, before shipment, in the Consolidated Ashcroft Hancock high pressure steam testing laboratory — an assurance of successful performance.

In the power plants of the United States more than 90% of the safety valves in operation on steam pressures of 350 lbs. and over are Consolidated Safety Valves.

"Consolidated," with its 1200 lb. boiler equipment and testing laboratory, has been able to design a complete line of safety valves to meet every operating condition from 2 lbs. to 1500 lbs.

Consolidated Safety Valves are precision instruments which open cleanly at the set popping pressure and close sharply.

They are easy to adjust if it is desired to change popping point or blow down.

Any first-class machinist can repair a Consolidated Safety Valve.

Specify Catalogs Desired

Consolidated Safety Valves Z-5
American Recording Thermometers H-5
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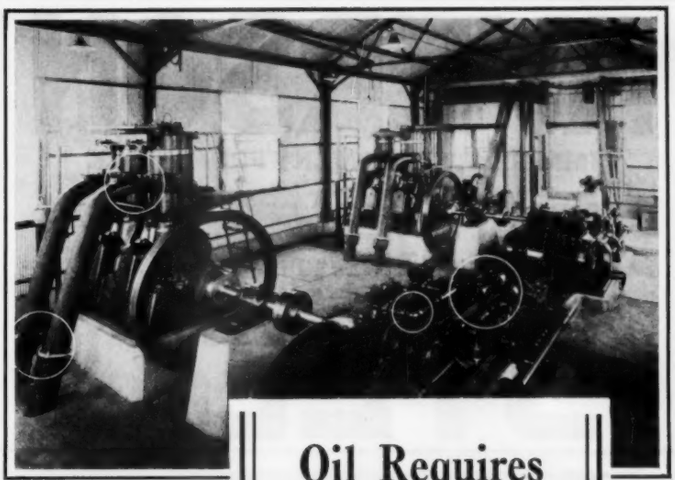
American Glass Thermometers F-5
American Dial Thermometers G-5
American Gauges A-5
American Recording Gauges E-5

CONSOLIDATED ASHCROFT HANCOCK CO., INC.
Bridgeport, Conn.
Subsidiary of Manning, Maxwell & Moore, Inc.

Name and address—	Barrels	Value
Merrick & Bristow, Ardmore, Okla.	249,857.54	177,003.44
Mid-Texas Petroleum Co., Oklahoma City, Okla.	(Back Tax)	
Merrick & Lamb, Ardmore, Okla.	24,254.67	20,003.09
Meyberry, C. R., Co., Laredo	3,610.43	3,080.16
Marts, E. R., et al, Dallas	4,422.52	5,868.16
Moore, C. O., Oil Corp., St. Louis, Mo.	13,602.95	18,600.32
Mortimer, Hobbs & Ferguson, Cisco (March)	318.91	348.16
Mortimer, Hobbs & Ferguson, Cisco (September, 1928)	249.81	308.20
Mortimer, Hobbs & Ferguson, Cisco (December, 1928)	647.93	799.36
Mortimer, Hobbs & Ferguson, Cisco	160.16	187.00
Morton, A. D., Tulsa, Okla.	811.80	1,073.76
Moutray Oil Co., Abilene	112,012.76	161,249.88
May, F. N., Santa Anna	314.00	419.26
Maer & Staniforth, Wichita Falls	1,665.95	2,168.45
Mid-Kansas Oil & Gas Co., Findlay, Ohio	2,088,399.05	1,669,046.64
Medio Oil Co., San Antonio	788.52	954.41
Milham Corp. of Texas, San Antonio	10,407.30	15,062.28
Moore, N. A., Eastland	2,822.77	4,043.11
Mordyan Petroleum Co., Pampa	5,532.76	7,334.10
Midwest Exploration Co., Denver, Colo.	130,253.64	151,482.19
Morgan, Ray, and others, Fort Worth	969.46	1,403.46
Mann & Forbes, Graham	2,174.00	3,227.80
Mecom Oil Co., Liberty	4,824.73	5,789.67
Meredith & Gant, Wichita Falls	2,247.82	2,704.74
Margurette Oil Co. (Cavanaugh lease), Albany (10-5-28 to 3-31-29)	4,484.86	5,976.54
Margurette Oil Co. (Arrowood lease), Albany (6-7-27 to 6-30-29)	1,611.73	2,145.92
Mills & Garitty, Corsicana	1,957.06	2,348.47
Marland Production Co., Ponca City, Okla.	1,817,468.19	1,745,856.44
Minor Oil Co., Beaumont	10,183.15	12,728.93
Marts, E. R., Dallas (1927 to 3-31-29)	9,707.67	9,277.72
Mitchell, Amos J., Wichita Falls (7-1-28 to 3-31-29)	3,137.29	4,283.01
Mitchell, Herman, Iowa Park (10-1927 to 3-31-29)	3,848.16	5,482.46
Middleton, J. H., Collinsville, Okla.	13,937.85	13,240.96
Morgan, Ray, et al, Fort Worth	4,471.56	6,384.17
Magnolia Petroleum Co., Dallas	2,568,770.35	2,609,259.27
Margurette Oil Co. (Cavanaugh lease), Albany	658.00	947.50
Margurette Oil Co., Tulsa, Okla.	5,994.53	7,107.57
Medina Oil & Gas Association, San Antonio	190.75	216.94
Mennis, G. W., Wichita Falls	5,784.82	7,934.61
Mues & MacDermott, Fort Worth	380.65	496.75
Montgomery, Rea-Montgomery, Sedgwick	1,592.42	2,225.78
Millikin, L. L., Burkburnett	385.83	521.10
Merrick & Belcher, Wichita Falls	6,785.18	11,409.19
Minerva Petroleum Co., Minerva	1,013.00	1,396.75
Melat Oil Co., Fort Worth	20,520.05	27,399.32
Murphy, J. A. and J. F. Williams, Mineral Wells (3-31-28 to 3-31-29)	2,325.49	2,911.49
Mendenhall Oil Co., Cisco	1,829.52	2,833.00
Madden, E. B., Olney	40,485.24	61,383.56
Madison Oil & Gas Co., Electra	4,789.20	7,256.34
Mason, J. F., Putnam	3,223.56	4,621.83
Magee, R. B., Wichita Falls	1,557.56	2,497.73
Meridian Petroleum Corp. of Texas, Tulsa, Okla.	3,295.79	4,075.22
Marshall, George S., Laredo	8,269.54	7,442.58
Mann, F. A., Graham	254.00	393.38
Mann, Floyd (Byne lease), Graham	1,311.70	1,871.52
Massie, J. H., Wichita Falls	18,654.36	27,031.74
Meredith, J. D., Moran	4,017.50	4,639.02
Mid-Tex Oil & Gas Co., Abilene	74.00	116.10
Marnet Oil & Gas Co., Tulsa, Okla.	4,818.39	6,595.39
Martin & Hamilton, Wichita Falls	24,338.30	31,542.43
Maxwell, J. C., Fort Worth	80,743.23	65,033.39
Midland Oil Co., et al, Forth Worth	378.03	518.58
Mid-Continent Holding Corp., Wichita Falls	10,909.93	16,730.28
Mid-Continent Petroleum Corp., Tulsa, Okla.	12,080.97	16,726.27
Menke, John G., Wichita Falls	1,503.69	2,190.08
Minntex Oil Corp., Wichita Falls	897.19	1,134.61
Mook-Texas Oil Co., Fort Worth	8,618.22	11,713.60
Moran, W. J., Wichita Falls	10,212.49	14,301.67
Moody Corp., Tulsa, Okla.	833,880.03	803,116.37
Minnehoma Oil & Gas Co., Tulsa, Okla.	3,734.94	3,397.50
Mitcham, G. P., Cisco	1,333.27	1,717.32
Moss & Urschel, Dallas	20,700.33	27,077.44
Moss, Urschel & Keys, Dallas	9,057.34	12,170.37
N		
Nash, Windfohr & Perry, Austin (2-1-29 to 7-1-29)	51,717.34	59,028.92
Nash & Windfohr, Graham (4-1-27 to 12-31-28)	71,130.47	106,209.89
Nabob Oil & Gas Co., Amarillo	9,820.94	13,831.34
Norman Oil Co., Wichita Falls	336.88	444.78
Newport & Ohio Petroleum Co., Newport, N. Y.	561.31	786.47
National Oil Co., San Antonio	761.39	791.20
Noack & Lanning Phillips & Perry, Rockdale	73.45	106.50
Noack Oil Co., Rockdale	1,684.56	2,291.00
Nimrod Oil Co., Dallas	244.52	322.77
Noack & Lanning-Shelton, Rockdale	310.49	419.16
Necessity Oil Corp., Eastland	1,178.79	1,587.50
Navarro Oil Co., Houston	349,399.70	422,801.12
Nutt & Gates, Wichita Falls	1,472.91	2,205.36
North Fork Oil Co., Amarillo	4,648.78	5,691.72
Newton-Palmer Oil Co., Rockdale	448.47	604.76
Number Nine Oil Co., Tulsa, Okla.	2,584.68	3,691.34
Nash & Windfohr, Graham	14,130.59	21,168.78
O		
Oil Royalty Corp., F. S. Preston, receiver, Brownwood	868.64	946.62
Old Ocean Oil Co., San Antonio	5,345.59	3,367.72
Omohundro, W. B., Wichita Falls	15,267.43	21,075.69
Overbey, J. D., Iowa Park	426.94	643.07
Osage Development Co., Bartlesville, Okla.	1,351.40	1,145.93
Optimist Oil Co., Electra	3,269.56	4,683.61
O'Neil, John, Wichita Falls	11,187.10	15,025.11
Olean Petroleum Co., Bristow, Okla.	20,730.33	16,697.46
Onsen, M., Kansas City, Mo.	964.34	1,406.01
Oil Investment Co., Wichita Falls	2,842.02	4,016.46
Old Colony Oil Co., Dayton	1,347.79	1,644.92
Owens, Sherwood B., Brownwood	470.00	648.60
Old Fields Corp. of Arkansas, El Dorado, Ark. (7-28 to 3-31-29)	399.00	502.74
Ohio-Texas Oil Co., Inc., Houston (9-30-26)	1,139.78	2,545.31
Ohio-Texas Oil Co., Inc., Houston (12-31-26)	835.39	1,728.62
Ohio-Texas Oil Co., Inc., Houston (3-31-27)	2,156.80	3,572.45
Ohio-Texas Oil Co., Inc., Houston (6-30-27)	3,091.91	3,955.70
Ohio-Texas Oil Co., Inc., Houston (9-30-27)	2,368.10	3,036.13
Ohio-Texas Oil Co., Inc., Houston (12-31-27)	1,691.66	2,172.11
Ohio-Texas Oil Co., Inc., Houston (3-31-28)	2,021.62	2,604.63
Ohio-Texas Oil Co., Inc., Houston (6-30-28)	2,613.10	3,420.46
Ohio-Texas Oil Co., Inc., Houston (9-30-28)	2,302.33	3,126.16
Ohio-Texas Oil Co., Inc., Houston (12-31-28)	32,084.74	47,737.61
Owenwood Pool No. 3, Fort Worth	4,569.21	6,147.36
Ohio Somerset Oil Co., Cleveland, Ohio	1,405.70	1,546.66
Orange Petroleum Corp., Orangefield	29,336.69	35,908.33
Oil Field Corp. of Arkansas, El Dorado, Ark.	97.00	130.95
Oriental Oil Co., Dallas	514.75	666.57
Oldom, William P., Iowa Park	1,891.00	2,797.87
Onyx Oil Co., Houston	13,226.74	11,092.15
Operators Oil Co., Tulsa, Okla.	293,378.06	409,686.20
Osborne, R. R., et al, Pampa	1,303.58	1,689.13
Owen-Sloan Oil Co., Big Spring	185,745.03	134,167.63
Oklahoma Petroleum & Gasoline Co., et al, Tulsa, Okla.	15,395.77	20,873.80
Olney Oil & Refining Co., Olney	335.14	493.98
P		
Paraffine Oil Co., Houston	12,033.79	15,009.13
Pennok Oil Corp., Dallas	14,480.56	18,956.27
Pickrell, Frank T. and Cranfill Brothers Oil Co., Fort Worth	8,912.28	5,903.58
Pilkinton, F. L., Burkburnett	1,829.61	2,371.68
Powell, J. L., Wichita Falls	492.84	708.31



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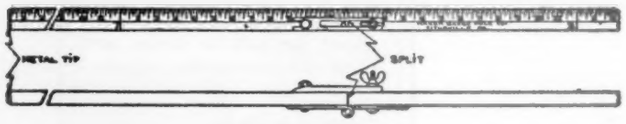

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Name and address—	Barrels	Value
Preston Oil & Gas Co., Brownwood	289.66	405.60
Pitzer & West, Breckenridge	16,864.73	24,709.83
Powell, T. O., Cross Plains	140.33	214.46
Perry, Thomas H., part of C. W. Boller et al, Wichita Falls	922.10	1,357.51
Pennell, C. A., Loving	3,452.13	3,884.63
Pennowa Oil & Gas Co., Skiatook, Okla. (March)	15,704.47	16,988.70
Pearson-Brahaney et al, Ranger (10-1925 to 6-30-29)	3,002.00	6,274.18
Pace, T. J., Iowa Park (11-1924 to 3-31-29)	8,677.00	15,948.49
Pelwin Oil Corp., Wichita Falls (March)	229.84	264.78
Preston Oil & Gas Co., Brownwood (March)	248.00	334.80
Pivoto, M. E., Sour Lake	3,384.94	4,093.20
Pickens & Lewis, Dallas	473.54	659.94
Pipe, L. E., trustee, Vernon	1,735.23	2,573.10
Phoenix Oil Co., Eastland	15,926.00	23,889.90
Pois & Johnson, Wichita Falls (7-29)	184.42	300.84
Parsons, Ed V., Fort Worth (March and June)	343.19	524.87
Primrose Oil Co., Sour Lake	975.48	1,217.85
Pollard, W. E. and C. E., Pampa	6,210.48	7,974.61
Price-Russell & Co., Ranger	4,736.29	7,727.16
Piney Oil & Gas Co., New York, N. Y.	4,736.58	3,914.44
Pandem Oil Corp., Wichita Falls	24,676.99	34,535.42
Parry Oil Co. of Texas, Inc., Fort Worth	508.71	720.33
Pure Oil Co., Chicago, Ill.	751,508.04	816,743.60
Powers Production Co., Houston	1,905.14	1,839.20
Poor Boy Oil Co., Rockdale	303.29	400.34
Pois, M., trustee, Wichita Falls	298.74	429.51
Pois & Johnson, Wichita Falls	689.90	932.18
Pois, M., et al, Wichita Falls	4,614.97	6,571.88
Pois Fine & Schulz, Wichita Falls	956.46	1,400.42
Powell, H. J., San Antonio	6,836.45	7,714.84
Pennell, C. A., Loving (March)	3,398.65	4,268.79
Pioneer Oil, Gas & Refining Co., Danville, Ill.	1,361.72	1,422.85
Panhandle Refining Co., Wichita Falls	144,268.41	213,851.55
Philp Brothers, Beaumont	4,096.97	5,125.99
Prairie Oil & Gas Co., Independence, Kans.	50,558.23	64,032.02
Prairie Oil & Gas Co., Independence, Kans.	1,447,178.47	1,413,459.79
Producers & Refiners Corp. of Texas, Independence, Kans.	5,628.36	7,816.53
Plymouth Oil Co., Pittsburgh, Pa.	109,642.92	101,365.27
Palmer, Freddie Oil Co., Rockdale	137.37	186.37
Producers Supply & Tool Co., Marietta, Ohio	4,206.86	6,012.91
Palmer & Burch, Inc., Wichita Falls	15,461.23	22,482.77
Paggi Brothers Oil Co., Beaumont	9,100.62	11,441.82
Poole, B. O., Batson	2,877.95	3,588.06
Portland Drilling Corp., Wichita Falls	942.01	1,337.49
Perkins & Cullum, Wichita Falls	39,288.63	57,138.67
Perkins, J. J., Wichita Falls	2,006.05	2,819.47
Putnam Oil Co., Tulsa, Okla.	44,131.35	61,364.15
Phillips Petroleum Co., Bartlesville, Okla.	1,709,129.17	2,116,585.61
Pecos Valley Oil Co., Fort Stockton (11-28 to 6-30-29)	15,394.53	12,129.47
Pace & Wood, Breckenridge	2,074.97	2,907.05
Pennowa Oil & Gas Co., Tulsa, Okla.	14,684.91	17,383.53
Phillips, W. G., & J. B. Milam, Chelsea, Okla.	130.54	178.73
P-M Drilling Co., Chelsea, Okla.	247.55	346.05
Pace, George L., Wichita Falls	688.75	1,003.80
Prairie Lea Production Co., San Antonio	7,261.30	6,114.08
Phillips, J. R. (Invader), Amarillo	12,326.99	11,487.85
Phillips, J. R. (Currie), Amarillo	1,318.31	1,566.14
Producers Drilling Co., Wichita Falls	7,251.02	10,655.37
Petroleum Producers Co., Wichita Falls	93,422.70	142,213.52
Petroleum Investment Co., Wichita Falls	3,353.47	4,895.22
Paggi, Charles, & Co., Beaumont	504.21	729.37
Progressive Production Co., Kansas City, Mo.	1,459.02	2,112.72
Pantex Oil Co., Boston, Mass.	8,368.00	9,961.55
Pharis Oil Co., Amarillo	2,298.11	2,175.42
Palo Duro Oil Co., Amarillo	7,372.08	7,272.45
Py-Tex Oil Co., Winchester, Ky.	3,723.65	5,700.43
Phair, F. L., & L. W. Wright, Houston	705.47	493.84
Pemeta Oil Co., Fort Worth	5,537.32	7,784.10
Pratt, Thomas H., Brenham	124.00	124.00
Paull Oil Co., Graham	15,393.60	22,785.61
Q		
Quinn, J. W., and others, Eastland	7,804.16	12,206.20
Quartet Oil Co., Tulsa, Okla.	7,011.01	11,022.36
Quincy Oil Co., Vernon	102.06	168.40
R		
Reeder & Scarborough, Wichita Falls	1,201.46	1,754.15
Ruby Oil Co., Minerva	235.33	305.09
Riner & Bailey, Wichita Falls	62,838.09	94,930.71
Rycade Oil Corp., Houston	190,798.67	195,180.31
Rockwell, J. A., & Co., Warren, Pa.	2,421.64	3,326.06
Rubsam & Hunter, Wichita Falls	3,211.55	4,855.50
Rock Island Oil Co., Amarillo	828.66	1,008.65
Robinson, Arthur D., Dallas	7,054.10	8,195.18
Ross, Dwight M., Wichita Falls	1,311.69	1,909.60
Ruthada Oil Co., Oklahoma City, Okla.	15,204.63	15,366.05
Ross, C. E., Burkburnett	559.12	799.81
Robertson Drilling Co., Fort Worth	2,046.65	2,833.41
Robertson, R. R., Wichita Falls	22,391.03	29,658.08
Richards, M. L., Wichita Falls (1-28 to 3-31-29)	33,817.00	50,725.09
Reinhart, M. J., trustee, Oklahoma City, Okla.	542.99	786.98
Richards, M. L., Wichita Falls	3,995.81	5,261.92
Royalty Oil Corp., Brownwood	85.00	86.70
Ramming, Staley & Ramming, Wichita Falls	568.66	756.09
Ramming, R. W., Wichita Falls	6.10	7.86
Rex Petroleum Corp., Vinton, La.	16,932.77	20,979.18
Richardson & Kelsey, Fort Worth	15,066.02	10,336.32
Rentex Oil Co., San Antonio	7,884.76	8,180.91
Rowe, J. G., Wichita Falls	3,371.14	5,072.36
Roy Long Oil Co., Navasota	2,362.39	3,245.65
Ross & Slicker Oil Co., Cisco	928.04	1,360.56
Roeser & Pendleton, Inc., Fort Worth	390,491.50	554,509.25
Riggs & Oliphant, Graham	17,822.93	24,848.43
Rountree & White, Rockdale	717.65	936.29
Reiter-Foster Oil Corp., Tulsa, Okla.	23,279.52	32,495.70
Reno Oil Co., Sistersville, W. Va.	55,795.29	82,903.19
Rock Creek Oil Corp., Amarillo	21,092.23	19,570.59
Root, C. M., and others, Eastland	16,064.00	22,666.00
Root, Rhodes, and others, Eastland	9,721.00	14,463.00
Root & Rhodes, Eastland	4,727.00	7,014.00
Root, C. M., and others, Eastland	18,394.00	25,690.00
Root, C. M., Eastland	7,534.00	11,150.00
Rockdale Oil Co., Rockdale	79.41	79.90
Rathke Oil Co., Wichita Falls	25,045.91	37,274.09
Ryan Consolidated Petroleum Corp., Tulsa, Okla.	79,559.14	111,549.66
Ramsel, W. T., Oil Co., Rockdale	1,881.20	2,558.42
Red River Oil Co., Tulsa, Okla.	16,558.06	23,740.99
Redmond, W. J., Brownwood	462.74	679.97
Rochmill, Henry, trustee, Fort Worth	623.02	767.11
Russell & Wilson, Wichita Falls	4,018.64	5,303.61
Roth & Faurot, Independence, Kans.	6,593.52	9,353.06
Roth & Faurot, Independence, Kans. (2-26 to 3-29)	40,398.98	61,523.41
Rexal Petroleum Corp., Houston	3,082.45	3,329.04
Rockdale Junior Oil Co., Rockdale	225.77	286.55
Reeder, R. S., and others, Wichita Falls	7,286.24	10,636.00
Robinson, O. D., Pittsburgh, Pa.	1,268.54	1,649.10
Ray & Massie, Wichita Falls	16,429.36	21,377.87
Ross Segunda Oil Co., Laredo	770.53	669.15
Ross Amigos Oil Co., Laredo	10,912.76	9,242.53
Ross, James F., Laredo	3,402.56	2,843.73
Ramsey, E. H., Rising Star	427.70	677.58
Rex-Tex Oil Co., Winchester, Ky.	3,723.65	5,700.43
Republic Production Co., Houston	741,855.04	693,014.22
Ruyle Farm & Oil Co., Wichita Falls	7,268.04	10,721.13
Roberts, H. W., Wichita Falls	2,405.78	3,745.18
Rio Bravo Oil Co., Houston	591,459.91	699,450.43
Reserve Petroleum Co. of Texas, Tulsa, Okla.	548.02	836.40
Ranell Oil Co., Oklahoma City, Okla.	4,559.71	6,441.31

Name and address—	Barrels	Value
Red Bank Oil Co., Tulsa, Okla.	16,875.92	23,981.62
Robert Oil Corp., Breckenridge	41,716.17	60,351.30
S		
Shaw, Neil K., and others, Brownwood (4-27 to 3-31-29)	270.00	337.50
Shaw, Neil K., and others, Brownwood (12-12-28 to 3-31-29)	120.00	151.20
Stump, E. J., & Co. and Venmex Oil Co., Wichita Falls	6,647.50	9,461.56
Scarborough & Reeder, Wichita Falls	812.04	1,212.41
Smith, E. L., Oil Co., Inc., Mexia	152,170.83	183,899.26
Smith, McIntosh & Thomas, Cameron	652.85	741.85
Smith, W. B., and others, Eastland	677.18	1,025.99
Somerset Oil Co., Somerset	1,137.09	1,227.96
Southern Crude Oil Purchasing Co., Fort Worth	3,811,091.43	2,884,982.82
Stout & Preston, Brownwood	490.00	723.47
Stout Petroleum Co., Brownwood	62.00	68.90
Superior Oil Production Co. and George E. Lamb, Brownwood	63.04	75.65
Snowden & McSweeney Co., New York, N. Y.	85,550.28	120,169.24
Sneed Royalty Co., Tulsa, Okla.	2,441.36	2,178.90
Sinclair Oil & Gas Co., Houston	137,328.06	174,041.69
Swanner, John L., Wichita Falls	2,019.60	2,889.29
Somerset Crude Oil & Refining Co., Somerset	2,767.22	3,130.82
Stampfly & Kell lease on C. C. Bloodworth, Archer City	149.33	179.20
Strelsky, Joe, & Hefley, Rockdale	473.93	643.44
Stratton, Ed F., Pioneer	298.92	366.77
Simmons, T. K., Tulsa, Okla.	2,666.53	3,637.34
Sircovich, A., and Mrs. F. M. Thomas, Houston	1,069.12	903.33
Sink, Joe, Corsicana	195.00	292.00
Shattuck, R. H., Dallas	3,939.10	5,316.87
Scott & Walker, Albany	4,606.23	5,666.80
Schoolfield, R. E., Wichita Falls	253.03	335.19
Shaw, Neil K., and others, Brownwood	80.00	100.00
S & W Oil Co., Amarillo	14,422.12	13,236.89
Saigh, N. A., San Antonio	1,372.69	1,743.33
Southern Petroleum Exploration, Inc., Sistersville, W. Va.	45,102.44	55,129.38
Seaboard Oil & Gas Co. of Texas, Wichita Falls	36,757.94	53,795.25
Sand Creek Oil Co., Amarillo	5,568.74	6,010.76
St. Albans, Ruth, Laredo	None	
Stratton, E. L., Fort Worth	191.52	208.75
Saigh, N. A., San Antonio	1,479.24	1,789.66
Speed, C. D., Corsicana	230.63	319.44
Staley, J. A., Wichita Falls	1,724.71	2,268.54
Standard Oil Land & Leasing Co., Electra	304.83	435.02
Skinner, E. W., Oil Co., Saratoga	4,418.11	4,821.76
Sigler Oil Co., San Antonio	1,309.69	1,442.13
Shappell Oil Co., Wichita Falls	51,107.07	74,576.08
Shallow Sand Oil Co., Fort Worth	703.04	880.20
Schlaffke, Edward, Electra	85.80	128.70
Schaffner, E. N., and others, Cross Plains	1,167.19	1,496.51
Salado Oil Co., San Antonio	1,664.14	1,782.30
Summit Oil & Refining Corp., Amarillo	4,248.62	4,738.64
Sullivan, M. J., Kansas City, Mo.	680.76	869.36
Snow Oil Co. (Riggs & Oliphant), Graham	1,036.22	1,430.42
Southern Exploration Co., Houston	271.88	344.29
Steed, Paul P., & A. R. Gaus, Wichita Falls	2,668.44	3,716.51
Steed, Paul P., Wichita Falls	1,804.44	2,680.72
Steed, Paul P., Wichita Falls	443.94	567.71
Stella Oil Co., Beaumont	13,224.27	16,616.32
Session, I. P., Rockdale	379.44	466.82
St. Marys Oil & Gas Co., St. Marys, W. Va.	35,758.39	40,995.67
Seybert Brothers, Mooringsport, La.	6,613.88	10,242.88
Slicker, Homer, Cisco	654.30	855.47
Smith, Mrs. James L., Amarillo	7,619.24	9,444.03
Smith & Bynum, Amarillo	2,115.75	2,336.13
Shoup, O. H., Jr., Colorado Springs, Colo.	3,070.10	4,466.74
Schlicher Oil Co., Beaumont	1,374.10	1,765.02
Scarborough & Smith, Burkburnett	469.26	587.39
Scarborough, W. A., Burkburnett	2,225.51	3,231.74
Stroube & Stroube, Corsicana	30,958.42	41,851.31
Sun Oil Co., Dallas	1,270,138.55	1,357,326.35
Scott & Britton, Gorham	170.40	209.50
Scott & Nance, Graham	1,639.37	2,094.56
Sedwick Oil Co., Tulsa, Okla.	13,544.92	17,697.27
Skia-Tex Petroleum Co., Amarillo	31,767.08	35,010.25
South Texas Petroleum Co., Houston	286,808.92	434,720.07
Smith, R. E., and others, Houston	3,153.85	3,909.78
Stekoll, Harry, & J. F. Champion, Tulsa, Okla.	3,000.26	2,553.84
Sinclair Oil & Gas Co., Tulsa, Okla.	121,843.18	181,702.69
Summerfield Oil Co., Tulsa, Okla.	219.68	308.21
Schermerhorn Oil Co., Minneapolis, Minn.	208,767.74	150,605.31
Shasta Oil Co. and Clifford Moores, Wichita Falls	590.26	743.24
Sprague Oil Co., Ardmore, Okla.	46,949.22	30,902.25
Skelly Oil Co., Tulsa, Okla.	942,435.02	849,438.53
Superior Oil Producing Co., Tulsa, Okla.	2,141.50	3,050.55
Spring Creek Oil Co., Amarillo	3,949.09	4,361.62
Spencer, H. H., & Co., Burkburnett	177.04	258.62
S & O Oil Co., Houston	3,900.41	3,494.70
Saxet Oil Co., Houston	176,801.98	190,379.83
Somerset Oil Co. of Massachusetts, Easthampton, Mass.	132.50	138.50
Sterling Oil & Gas Co., Tulsa, Okla.	165.54	182.35
Sandefer-Atkinson-Daniel Oil Corp., Breckenridge	3,991.10	5,231.39
Stedham & Thrasher, Electra	425.68	367.32
Sheffield, Frank H., Beaumont	1,864.83	2,326.72
Shaw Oil Co., Wichita Falls	67,368.33	95,121.75
Staley, J. I., & Co., Wichita Falls	3,646.68	5,043.79
Staley, Wynne & Co., Wichita Falls	161,470.24	204,849.96
Stock, H. I., Cisco	2,040.31	2,729.20
Shell Petroleum Corp., St. Louis, Mo.	3,345,651.89	3,060,010.31
Smith, McIntosh, Thomas & Coulter, Cameron	1,455.09	1,956.22
Supreme Oil Co., Orange	3,144.96	3,957.22
Saratoga Oil Co., Wichita Falls	656.46	921.02
Star Drilling Co., Wichita Falls	3,718.30	5,537.94
Schaffner-Wilson and others, Markley	1,746.48	2,888.06
Snider, C. W., Wichita Falls	1,096.06	1,672.82
Stovall, E. C., Graham	9,535.60	12,939.91
Samuell, Howard, and others, Shawnee, Okla.	552.80	653.72
Stephens & Fisher, Wichita Falls	989.12	1,240.63
Simms Oil Co., Dallas	878,813.85	781,949.70
Syndicate Oil Corp., Rochester, N. Y.	1,912.17	2,913.40
Selby Oil & Gas Co., Tulsa, Okla.	6,852.45	10,610.92
Smith, Levi, Texon (1-1-28 to 6-30-29)	18,311.56	28,587.29
Smith, Levi, and J. C. Shaffer, Texon	277.74	334.51
Sheldon, C. P., Electra	7,695.70	11,014.01
States Oil Corp., Eastland	42,433.36	63,055.76
Shaw, T. G., Fort Worth	178,230.58	214,579.40
Shutzer Brothers, Dewey, Okla.	6,381.14	8,892.55
T		
Treat, E. M., Oil & Gas Co., Pittsburgh, Pa.	2,489.44	3,408.73
Trimount Petroleum Co., Shreveport, La.	7,818.64	12,689.52
Trippichorn, J. W., & D. R., Fort Worth	3,870.88	5,929.94
Tyson Oil Co., Sour Lake	356.41	445.51
Treatsorth, L., and others' Property No. 2, Eastland	773.87	1,147.90
Texas Petroleum Co., San Antonio	34,718.35	42,701.11
Tannehill, L. B., Albany	61,997.66	88,015.37
Thomas, J. A., Burkburnett	1,898.94	2,760.87
Trinity Townsite Co., Dallas	732.41	967.13
Trans-Bay Oil Co., Galveston	60.00	60.00
Tower & McKanna, Inc., Wichita Falls	4,499.44	6,808.89
Teci Production Co., Breckenridge	2,930.32	3,823.61
Treat, E. M., Oil & Gas Co., Pittsburgh, Pa.	20,526.18	27,442.42
Turner, J. H., Drilling & Production Co., Wichita Falls (3-28 and 1-29)	13,229.55	17,240.64
Talbot & Markle Olfrey No. 1, Houston	60,926.55	75,222.87
Thaxton, W. H., estate, Austin	312.12	436.96
Texas Petroleum Development Co., Cameron	5,576.28	7,512.60
Treatsorth, L., and others' Property No. 1, Eastland	1,868.99	3,004.80
Townsite Oil Co., Olney	204.60	292.49
Turman & Brown, Fort Worth	13,441.08	15,487.64
Turman, L. C., Fort Worth	79,258.51	62,271.08

Another "American" Installation

Illustrated above is an installation with a No. 3 "American" individual pumping unit showing use of Tex-rope drive. This unit is adaptable for 18″ or 22″ stroke. It is furnished for belt drive or drive as shown.

The "American" individual oil well pumping unit is made in six sizes. They are compact and have few moving parts. All gears and pinions are oil immersed. All of the bearings except two are automatically lubricated. The power consumption is small and the units are easily counterbalanced.

All of these units give a straight lift on the polish rod and the special mule head and cable sling protect the unit in case of well sanding.

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OGJ 9-5-Gray

Name and address—	Barrels	Value
Theis Oil Co., Sour Lake	4,967.53	6,232.44
Terry, H. W., Sour Lake	9,582.25	10,486.61
Talley & Irick, Shreveport, La.	193.92	271.49
Thompson, J. E., Humble	620.00	785.00
The Texas Company, Houston	4,047,495.60	5,128,320.38
Texsota Petroleum Co., Electra	231.98	313.40
Tillman, J. W., Humble	305.86	335.75
Thomasson, E. M., & Co., Inc., Denver, Colo.	638.75	1,025.85
Texas Oil Underwriters, Brownwood	54.45	70.07
Triangle Petroleum Co., Fort Worth	885.20	1,292.26
Texas Consolidated Oil Co., San Francisco, Calif.	13,783.63	19,765.74
Texas Pacific Coal & Oil Co., Thurber	302,401.77	340,285.94
Texas Pacific Coal & Oil Co., Thurber	55,431.37	91,227.16
Tex-Cal Co., Brownwood	495.40	619.25
Tegler, F. E., San Antonio	337.61	337.61
Towns, M. K., Luling	30,384.45	34,531.10
Teatsorth, L., and others' Property No. 3, Eastland	399.27	651.67
Tidal Oil Co., Tulsa, Okla.	215,210.42	195,507.85
Turman Oil Co., Tulsa, Okla.	17,151.37	24,521.26
Texas Unity Oil Co., Dallas	2,415.84	3,525.24
Transcontinental Oil Co., Tulsa, Okla.	2,044,750.32	1,611,291.54
Transcontinental Oil Co., Tulsa, Okla.	19,511.00	26,833.43
Transcontinental Oil Co., Tulsa, Okla.	4,445.52	6,541.18
Triangle Oil & Gas Co., Rockdale	1,058.69	1,416.15
Tidwell, R. V., trustee, Graham	4,784.24	6,822.67
Tucker Oil Co., Wichita Falls	81,804.41	112,764.61
Texas Fidelity Oil Corp., Fort Worth	8,594.71	13,677.53
Taylor-Bibley Syndicate, Dallas	2,119.12	3,128.26
Taylor-Link Oil Co., Houston	42,775.41	35,111.26
Trinity Production Co., Wichita Falls	385.05	548.70
Texon Oil & Land Co. of Texas, Big Lake	199,889.96	124,064.40
Tripplehorn, D. R., Pampa	8,922.87	13,311.29
Tidwell, H. L., trustee, Graham	1,104.92	1,538.96
Tholl Oil Co., Beaumont	4,325.41	6,794.54
Thurber, C. J., Iowa Park	615.68	877.98
Travelers Oil Co., Amarillo	11,576.10	13,336.01
Timms, L. W., Oil Corp., Amarillo	9,257.00	12,205.62
Timms-Dietsch Oil Corp., Amarillo	6,911.00	8,957.41
U		
Underwood Drilling Co. (Perkins lease), Wichita Falls	3,867.24	7,030.47
Underwood Drilling Co. (Erwin lease), Wichita Falls	1,764.75	3,160.41
Underwood Drilling Co. (Ward A lease), Wichita Falls	3,837.48	5,454.74
Union Oil & Mining Co., Tulsa, Okla.	10,178.21	13,231.67
Unity Oil Co., Beaumont	20,500.00	25,634.00
United Oil Corp., Wichita Falls	1,694.07	2,505.95
United Petroleum Co., Brownwood	120.52	141.01
Usona Production Co., Dallas	2,202.00	2,691.32
United Oil & Fuel Co., Sour Lake	1,325.42	1,642.70
Underwood Drilling Co. (U-C-Ward lease), Wichita Falls	1,717.76	2,389.88
Unice & Carpenter, Houston	3,705.00	3,941.92
Upland Oil Co., Pampa	2,676.80	3,440.65
Usona Production Co., Dallas	768.89	1,190.50
United Royalties Corp., Wichita Falls	740.60	1,157.04
Union Production Co., Rockdale	4,345.49	5,779.50
United Producers Co., Wichita Falls	34,298.63	51,614.96
V		
Vacuum Oil Co., Houston	104,728.62	145,375.63
Victor Oil Co., San Antonio	1,385.54	1,108.43
Venmex Oil Co. of Texas, Wichita Falls	56,931.21	85,719.49
Van Wormer, F. E., Wichita Falls	1,409.53	2,192.83
Virginia Oil Association, Inc., Fort Worth	2,663.97	3,900.17
Val Verde Oil Co., Del Rio	1,738.00	2,007.61
Valerio, Inc., San Antonio	506.30	578.41
Van Cleve Trust, Baltimore, Md.	615.44	898.79
Victor Co., San Antonio	2,805.29	3,159.85
W		
Weiler, H. J., Wichita Falls	348.28	487.59
Weaver & Pois, Wichita Falls	2,646.38	3,753.75
Whiteside, J. E., Brownwood	446.52	558.14
White & Duncan, Wichita Falls	8,141.35	11,730.12
Wahpoo Oil Co., Rockdale	1,405.06	1,953.03
West, Mrs. Bessie M., Houston	2,566.89	3,212.23
Woodward & Lee, Houston	7,607.08	8,229.26
Wallace, Dr. Charles William, and Hulda B., Wichita Falls	23,496.05	35,470.56
Wetzel, Sophie, Oconomowoc, Wis.	4,552.12	4,675.40
Westervelt, Noble et al, Oklahoma City, Okla.	4,421.56	6,308.54
Williams & Williams, Amarillo	1,224.37	1,124.71
White, James H., Wichita Falls	9,489.65	13,970.76
Woodburn Oil Corp., Dallas	4,046.71	5,669.11
Weller, C. A., Brownwood	43.14	56.45
Williams, John H., Dallas	5,337.02	7,481.91
Washoma Petroleum Co., Enid, Okla.	3,416.65	5,136.58
Wills, O. C., Burkburnett	906.97	1,220.13
Wilkins, L. A., Burkburnett	3,433.38	4,635.06
Wills Oil Co., Rockdale	1,427.59	1,927.38
Wheelock & Collins, Corsicana	14,846.53	21,663.62
Worth Oil Co., Wichita Falls	152.00	212.80
Woods & Bennett, Humble	7,002.63	8,797.90
Woody, W. C., one-sixth interest in C. W. Boller and others, Wichita Falls	992.10	1,357.10
Witcher, W. C., and others, Wichita Falls	374.69	573.77
Witcher, Annie L., guardian, Wichita Falls	4,205.59	6,362.66
Walker, A. C., Albany	3,408.75	4,458.16
Woodson Oil Co., Woodson	3,403.88	4,403.51
Winstead, K. B., Breckenridge	2,709.22	4,244.38
Worth Oil Co., Wichita Falls	165.00	231.00
Whiteside, J. E., Brownwood	2,229.00	2,786.25
Woods, C. D., & C. C., Ranger	2,026.30	2,788.91
Webb Oil Co., Humble	4,747.13	5,972.37
Walton, T. J., Corsicana	61.20	71.60
Weiler, J. G., and others, Cross Plains	2,121.50	3,122.61
Wilson Drilling Co. (Comet), Wichita Falls	3,367.38	5,050.16
Wolfe, A. T., Wichita Falls	4,012.18	5,718.20
Wilson Drilling Co. (Rathke), Wichita Falls	3,142.15	4,607.15
Wilson Drilling Co. (K.K."A"&"B"), Wichita Falls	2,908.74	4,341.77
Wilson Drilling Co. (K.K."C"), Wichita Falls	384.47	536.78
Wilson Drilling Co. (Snedeker), Wichita Falls	78.52	96.59
Weekley Oil Corp., Fort Worth	4,478.85	3,913.83
Wakefield, M. E., and others, Cross Plains	153.50	242.15
Wilson-Broach Co., Beaumont	14,219.97	17,721.78
Wilcox, H. F., Oil & Gas Co., Tulsa, Okla.	82,362.80	110,589.40
Watts Oil Co., Houston	3,667.62	4,078.92
West Production Co., Houston	5,789.48	6,343.98
Woodley Petroleum Co., Shreveport, La.	10,072.87	15,536.08
Weldon Oil Co., Saratoga	11,050.75	11,763.98
World Oil Co., Fort Worth	5,859.95	5,014.84
Woods, C. D., & C. C., Ranger	178.86	281.27
Woods, C. D., & C. C., Ranger	757.60	1,013.44
Why Not Oil Co., Mexia	8,933.00	12,167.92
Westheimer & Daube, Ardmore, Okla.	1,412.46	1,834.51
West, J. H., Cisco	6,110.16	8,572.90
White Eagle Oil & Refining Co., Kansas City, Mo.	53,627.00	57,382.00
Whaley Mineral & Realty Trust, Fort Worth	2,342.76	3,291.77
Whaley Mineral & Realty Trust, Fort Worth (March)	2,361.99	3,094.46
Wilson, Lee, and others, Wichita Falls	5,663.42	8,136.67
Ward Oil Corp., Ardmore, Okla.	122,860.15	83,611.00
Wampem Oil Corp. of Texas, Dallas	516.03	722.14
Warner-Quinlan Co. of Texas, Dallas	203,389.46	163,934.63
Wentz, L. H., Ponca City, Okla.	45,209.33	43,208.05
Walker, B. S., Breckenridge	660.81	825.58
Wood, Benton, Lesh & McCall, Nocona	5,963.62	5,665.44
Wilbarger Oil Co., Wichita Falls	2,550.52	3,147.39
Wichita Production Co., Wichita Falls	11,566.99	16,184.62
Western Oil Sales Corp., Wichita Falls	2,306.14	3,656.92
Weister, E. F., Tulsa, Okla.	3,501.44	4,744.42
Witherspoon Oil Co. & C. L. Witherspoon, San Antonio	68,082.79	63,112.82
Witherspoon Refining Co., San Antonio	4,388.41	4,811.76
Whitehill Oil Corp., Tulsa, Okla.	4,041.05	5,881.69

Name and address—	Barrels	Value
Wise & Jacason, Sapulpa, Okla.	4,755.17	6,493.58
Williams, Burt, Wichita Falls	859.23	1,194.84
Waggoner, E. P., & C. F. Kolp, Electra	8,271.77	11,428.18
Webb, J. R., & J. H. Bryant, Corsicana	376.83	339.34
Webb, J. R., Corsicana	251.06	313.75
Wolf, D. L., Olney	532.72	714.34
Waggoner Refining Co., Inc., Electra	392,235.40	525,453.72
Y		
Yount Lee Oil Co., Beaumont	2,816,027.29	3,300,717.72
York Petroleum Co., Stamford	76.96	107.74
Young Brothers & Alexander, Inc., Fort Worth	5,187.54	7,632.74
Young Brothers & Alexander, Inc., & Woodley Petroleum Co., Fort Worth	10,071.41	15,536.16
Z		
Zadie Belle Oil Co., Fort Worth	532.86	826.49

ADDITIONAL OKLAHOMA REPORTS

The gross production reports of the following Oklahoma companies for the second quarter of 1929 were received too late to be included in the detailed report on Oklahoma published in the issue of August 22:

	Oil (bbls.)	Gas (M cu. ft.)	Value
Carter Oil Co., Tulsa	.....	gas	$380,057.33
Humble Oil & Refining Co., Houston, Tex.	225,134.45	.....	254,444.61
Beacon Oil Co., Boston, Mass.	5,091.43	.....	5,693.88
Foster Petroleum Corp.,* Bartlesville	24,703.77	.....	33,504.31
Foster Petroleum Corp., Bartlesville	.....	gas	945.73
Foster Petroleum Corp., Bartlesville	207,615.97	.....	281,299.53
Foster & Davis, Bartlesville	8,998.31	.....	11,624.66

*Indicates royalty.

EASTERN FIELDS

(Continued from Page 80)

erty. In Lincoln district, Wayne County, the United Fuel Gas Co. is drilling on the J. M. and J. V. Curry farms. In Stonewall district, the United Fuel Gas Co. is rigging up on the C. M. Fraley farm. The same company has made a location on the Guyandotte Land Association's property.

In Crook district, Boone County, the Martha Oil Co. has started to drill on the R. L. Price heirs' farm. In the same district, Ira D. Sayer has started to drill on the Samuel and Maria Griffin farm. In Henry district, Clay County, the Virginian Gasoline & Oil Co. is drilling two wells and made the location for another on the Reed, Davis and Pearson farms. In Cabin Creek district, Kanawha County, the Pure Oil Co. is drilling on the Stone & Co. farm. In Elk district, T. McClure is building a rig on the Wise McCabe farm. In Malden district, H. Bayless, trustee, is drilling on the J. S. Coon farm. In Union district, the Gillespie Gas Co. is drilling on the W. E. Malise farm.

SOUTHEAST OHIO

In the NW Section 25, Washington Township, Hocking County, the Gordon Oil Co. has completed and shot in the Clinton sand No. 10 on the William Stone farm. It produced 62 bbls. the first 24 hours. In Section 12, Franklin Township, Licking County, the Peoples Banking & Trust Co. has completed a 3-bbl. pumper at No. 14 on the J. W. L. Motherdpaw farm.

In the NE Section 22, Washington Township, Hocking County, the Preston Oil Co. has completed and shot in the Clinton sand No. 3 on the Henry Rheinscheld farm. It produced 12 bbls. the first 24 hours. In Section 35, Olive Township, Noble County, Albert Miller & Co. have a very light pumper in the 300-foot sand at No. 8 on the Herman Williams farm.

In Section 4, Franklin Township, Monroe County, S. A. Cobb has completed a test on the Lafe Hanson farm. It is a light gasser in the Berea grit. In Section 3, same township, Shay, McMullin & Co. have completed in the same formation a test on the J. W. Wilhelm farm. It is a gasser. In Sutton Township, Meigs County, Smith & Waterson have started to drill on the A. C. Carnahan farm.

Town Lot Dusters

The town lot development in and near Alliance, Stark County, Ohio, is not meeting with good results, all three late completions coming in dusters.

The Hill Top Oil Co.'s Nos. 2 and 3 on F. A. Holler farm are both dusters in the Berea grit. In the same locality, the McChesney Register Co. has a duster in the same formation at a test on the McChesney Register Co.'s property.

In Section 35, Bethel Township, Monroe County, the Sylvania Producing Co. has a 2-bbl. pumper on the C. W. Winland farm. In the same township, Millard Dennis has the same kind of a pumper on the John A. Roach farm. In Franklin and Bethel Townships there are 10 wells drilling. In Section 8, S. J. Denbow and others are drilling a test on the Peter Reubeck heirs' farm.

In Lot 10, Union Township, Knox County, the Pure Oil Co. has completed and shot in the Clinton sand its test on the Ella Biggs farm. It produced 55 bbls. the first 24 hours. In the SW Section 6, Pike Township, Coshocton County, the Preston Oil Co.'s second test on the Henry J. Rine farm produced 53 bbls. the first 24 hours after completed and shot in the Clinton sand.

In Section 29, Paint Township, Holmes County, the Logan Gas Co.'s test on the Sevilla Herman farm is a gasser in the Clinton sand good for 1,000,000 feet. In the SW Section 17, Harrison Township, Perry County, the Pure Oil Co.'s second test on the George Gabriel farm is a light gasser in the same formation.

Monroe and Licking Counties

In Section 8, Bethel Township, Monroe County, F. O. Parks & Co. have completed No. 6 on the Lena Nield farm. It produced 25 bbls. the first 24 hours after drilled into the Germantown sand. In Section 10, Fallsbury Township, Licking County, the Emerald Petroleum Co.'s No. 5 on the J. E. Martin farm is a 15-bbl. pumper in the Berea grit.

In Section 34, Bethel Township, Monroe County, Henry Hercher has completed in the Squaw sand No. 14 on his own farm. It is a duster. In Section 16, Perry Township, Licking County, the Preston Oil Co.'s test on the J. D. Murphy farm is a 4-bbl. pumper in the Berea grit.

Located in Section 25, Hardy Township, Holmes County, the Kemrow Co. has completed and shot in the Clinton sand a second test on the Mary E. Bolan farm.

In Monroe Township, Holmes County, the Arkansas Fuel Oil Co. has a gasser in the Clinton sand at a second test on the James T. Patterson farm. In Section 28, Grandview Township, Washington County, the Sheest Oil Co. has a light pumper in the Keener sand at a second test on the Joseph Jones heirs' farm.

SOUTHWEST PENNSYLVANIA

In Perry Township, Greene County, Pennsylvania, the Peoples Natural Gas Co. has drilled down from the Big Injun to the Bayard sand its old gasser on the Joshua Pyles farm. It is showing for a 10-bbl. pumper. The South Penn Oil Co. holds the oil rights on this farm and will operate the well.

Near Carothers, Washington County, the Carnegie Natural Gas Co. has a duster at a test on the Jacob Stewart heirs' farm.

In Morris Township, Greene County, the Consumers Fuel Co.'s No. 6 on the Anderson heirs' farm is a gasser. In Perry Township, the Peoples Natural Gas Co. has drilled deeper No. 2 on the War-

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ren Pyles farm and showing a little oil in the Fifth sand.

In the Cliff Mines district, Findlay Township, Allegheny County, R. C. and H. P. Chesnay have completed No. 4 on the Lettie Chaney farm. It is a light gasser in the 30-foot sand.

In Morris Township, Washington County, the Manufacturers Light & Heat Co.'s No. 5 on the Day farm is still holding up at 90 bbls. a day.

KENTUCKY-TENNESSEE

(Continued from Page 80)

wells are credited with initial production of 70, 60, 100, 100, 200 and 180 bbls., respectively.

On the L. Trodgen farm, which lies between the Kirk and Bartlett farms, C. E. Daugherty and others' Nos. 8, 9, 10 and 11 are reported with initial production of 110, 125, 125 and 160 bbls., respectively.

Rex-Pyramid Oil Co.'s test on the Sallie Hoover to the southeast of the good wells on the G. W. Morgan farm, is reported good for 100 bbls. initial.

In the Friendship Church area of Ohio County, Ogle, Maxey and others' No. 11, on the Payton Royal farm, is reported good for 100 bbls. initial. The Royal lease is proven to be a rich one, producing oil from both the Jett and Barlow sands. Three sets of twin wells are on the lease now. The wells are of about the same capacity. Four rigs are being kept busy until the lease is drilled up in both sands, which will take until winter to complete. It is now considered one of the richest producing leases in that section.

In the Whittaker Pool, James C. Ellis and others' Nos. 5, 6 and 7, on the Otis Greer farm, are reported at 35, 30 and 80 bbls. initial, respectively.

In the Deanfield area, S. H. Russell and others' No. 7, on the H. C. Greer, produced 20 bbls. the first 24 hours. In this well a string of 679 feet of casing was set, with sand from 679-703 feet. Russell & Rudolph's second test on the P. R. Kelley 70 acres, same field, was dry at 720 feet.

Daviess County

The Shell Petroleum Corp.'s No. 1, on the Weatherford farm, south of the Jones Pool and southwest of Whitesville, in Daviess County, according to reports, shows for 75 bbls.

Dahlgren, McMahan and others' deep test on the Jennie Wilson 1,300-acre farm, 3 miles west of Owensboro, has been given up as a failure, as strong sulphur water was encountered at a depth around 1,825 feet. The casing is being pulled from the well. This 84-foot standard drilling outfit will be moved to the Wickliff Coal Co. property, 10 miles east of Greenville, and a short distance east of Drakesboro, where a deep test will be made in Muhlenburg County.

In the Red Hill Field in Daviess County, Goldburg, Young and others' Nos. 7 and 8, on the Lindsay Purcell farm, are rated at 35 bbls. each initial.

In the Utica Field, the Petroleum Co.'s No. 4, on the Tony Hansford farm, is reported around 10 bbls.

Ohio Oil Co.'s No. 3 on the G. R. Ruby farm, 3½ miles west of Utica, is a 15-bbl. pumper.

Other Wells

Roy Hogan and others drilled a dry hole in a test on the A. C. Atherton farm, in McLean County.

S. B. Wilson & Sons of Bowling Green, Ky., drilling in the Farmersville Dome area, in Caldwell County, 8 miles north of Princeton, reported bringing in a gas well on the Thomas H. Son farm. There is also a gas well in on the Jenkins farm, by the Caldwell Oil & Gas Co. It is rumored that gas from this area will be piped to Evansville, Paducah and other near-by cities.

James C. Ellis and others have moved two drilling outfits on the Ira Moseley farm, for the drilling of Nos. 5 and 6 on the lease, there being four producing wells already. Same parties have started the drilling of a well on the Rebecca Westerfield farm, south of Whitesville, in Daviess County.

Petroleum Exploration Co. has started work at a test on the Rhodes lease, in the Deanfield section of Ohio County.

Missouri-Kansas Pipe Line Co. is due to bring in No. 2 on the Ivy farm, in the Jones Pool, of Daviess County. H. C. Smith Oil Co. is drilling a wildcat well on the Ira Montgomery farm, southeast of Knottsville, same county and northwest of the Roby Pool.

Ohio County

Ohio Oil Co. is drilling Nos. 14 and 15 on the J. A. Kirk lease, in the Bartlett Pool, of Ohio County. Hupp and Duff are drilling Nos. 19 and 20 on the L. Trodgen lease, same pool, while on the other part of the same farm. C. E. Daugherty and others are drilling No. 12 well. Ogle and Maxey are drilling Nos. 12, 13 and 14 on the Payton Royal farm, in the Friendship Church area of Ohio County. James C. Ellis is drilling No. 3 on the A. B. Ralph farm, at Ralph's Store. Creek Drilling Co. is drilling No. 11 on the Early farm, in the southern part of the old Ambrose Pool, also drilling No. 2 on the Harry Payne farm, in the Deanfield area.

In Ohio County, the Ohio Oil Co. is drilling No. 5 on the Whittaker heirs' 84 acres, in the Whittaker Pool. D. J. White and others are drilling No. 4 on the Jeff Wade 50 acres, in the Ralph Pool. George Slate and others are drilling a test on the Kirk and Woodward farm, same pool, and C. Claypool and others are drilling No. 3 on the William Wade 50 acres, same pool. Chester Oil Co. is drilling No. 5 M. E. Medcalf farm, in the Deanfield Pool. In the same pool, Fred Weir and others are drilling No. 7 on the Norris heirs' 100 acres. Russell & Rudolph are drilling No. 1 P. F. Brown 6 acres, and No. 8 on the H. C. Greer farm, same pool.

In Daviess County, in the Whitesville area, James C. Ellis and others are drilling No. 3 on the Widow McKinley farm, and Vickers and others drilling No. 4 Stinnetts heirs, same area.

EXPLORE NOVA SCOTIA

NEW YORK, Sept. 2.—The Imperial Oil Co., Canadian subsidiary of the Standard Oil Co. of New Jersey, has started exploration work in Nova Scotia in an effort to locate oil deposits. The Imperial is reported to have optioned a large acreage in Nova Scotia, and will spend a considerable sum in putting down test wells. Presence of oil in Nova Scotia has been reported for years, but thus far no important tests have been made. Cumberland County, Nova Scotia, is noted for its coal production, some of the mines in the area being among the oldest on the continent. Doheny interests several weeks ago were reported to have taken options on considerable Nova Scotian acreage, preparatory to drilling.

OIL COMPANY CONSIDERS SALE

Stockholders of the New Bradford Oil Co. will meet in Denver, Colo., on September 30 to consider the purchase of 532,000 shares, or 80 per cent of the stock of the Argo Oil Co. An offer has been made to New Bradford for the sale of 145,000 shares of Argo at $3 cash a share. The remainder of the purchase could be accomplished through an exchange of stock, with New Bradford shares accepted at the par value of $5. This would be equivalent to an exchange on a basis of five shares of Argo for three shares of New Bradford. The Argo company has a production of about 1,300 bbls. of crude oil daily.

KILLED IN PLANE ACCIDENT

Luther B. McMillan, 13 years general consulting engineer of Johns-Manville Corp., New York, died in St. James Hospital, Newark, N. J., from injuries received in an airplane accident. The plane in which he was accustomed to travel between the Newark metropolitan airport and Manville, N. J., fell into a spin and landed in marshy ground near the airport.

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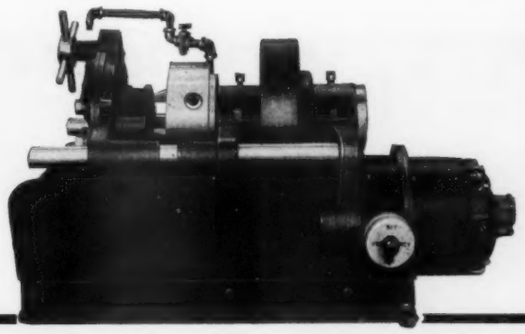

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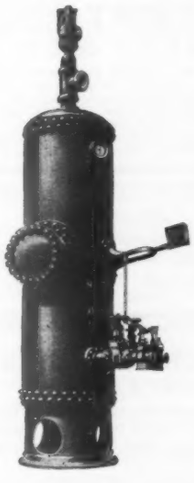

where wells will stand the pressure, allows the gas to be delivered to the absorption plant under pressure. The oil then may be sent to a secondary separator where the final gas and vapor is recovered under atmospheric pressure.

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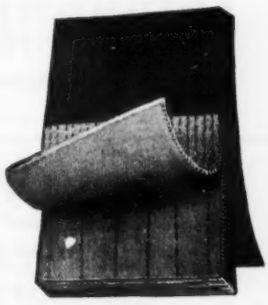

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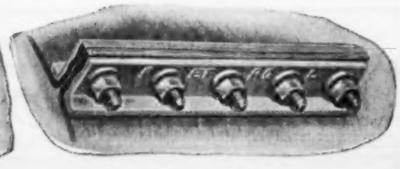

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OIL MEN LEADERS IN NEW AIRPORT COMPANY

The North American Air Lines, Inc., which recently was organized by business men and aviators of Tulsa, is expected to prove of interest to the oil fraternity. Walter H. Helmerich, of Helmerich & Payne, Home Royalty Association of Oklahoma, Braman Oil Co. and Interstate Producing Co. is president of the new company. Earl Sneed, of the Sneed Royalty Co. and a director in the Producers National Bank, is a director. Other oil men interested are L. R. Chalmers, formerly with the Reiter-Foster Oil Co., executive vice president, and John Mabee, drilling contractor, director of the company.

The company will operate a chain of airports from St. Louis to the Pacific Coast, a large number of which they have already negotiated for. Many oil men have taken to the air in recent months creating need of airports in all parts of the country in which oil men are interested. It is with the idea in mind of helping to supply this need that the company has been organized. The home office of the company is in the Hunt Building in Tulsa.

TO COMPLETE ORIENT

The Santa Fe Railroad engineers let a contract to the List Construction Co. of Kansas City, Mo., at Alpine, Tex., on August 26, for completing the Orient from Alpine, Tex., to the town of Presidio del Norte on the Mexican side of the Rio Grande River, opposite Presidio, Tex.

This work calls for the completion of 90 miles of track and the erection of a steel bridge across the Rio Grande and must be finished within 14 months. The railroad is now completed from the southwest on the Mexican side to Presidio del Norte, and with this new track completed the Orient will be able to run trains direct from Wichita, Kans., to its western terminal at Minaca, in the State of Chihuahua, Mexico.

The new work has actually started this week from the town of Paisano, about 12 miles west of Alpine, for the Interstate Commerce Commission would not issue permit to parallel the tracks of the Southern Pacific System so their tracks will be used by the Orient for 12 miles out of Alpine.

SEEK OIL IN FLORIDA

The Miami-Florida Oil Co. plans to explore for oil and gas in Dade and Monroe Counties, Florida. It has leased 33,000 acres of Dade County land from trustees of the internal improvement fund at Tallahassee.

LICENSES FOR EXPLORATION

The Geophysical Research Corp. has filed with the Federal Radio Commission applications for portable stations to be employed in geophysical explorations for oil in the Southwest.

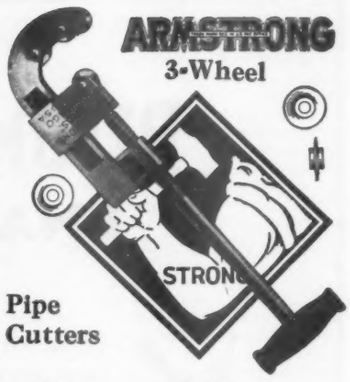
TRANSCONTINENTAL'S OUTPUT

The Transcontinental Oil Co. reports a net production during June of 737,377 bbls., a daily average of 24,579, compared with 632,554 bbls., or a daily average of 20,405, in May.

LEGAL

TRIBAL OSAGE OIL LEASES AT PUBLIC AUCTION SEPTEMBER 20, 1929, BY UNITED STATES GOVERNMENT.

At Pawhuska, Oklahoma, about 20,000 acres will be offered for oil leases in quarter section tracts. Bids will be for bonus in addition to royalties, 25% payable on day of sale, balance in three annual installments, with acceptable security. Within advertised area there are about 9,850 wells producing from one barrel to 100 barrels each, the total daily production for June, 1929, being about 42,000 barrels; also, there are about 30 wells drilling. All lands are now leased separately for gas. Blue print maps of area advertised, showing tracts producing oil or gas, can be had for fifty cents each, also logs of producing oil or gas wells for twenty-five cents each well. Write U. S. Superintendent, Osage Agency, Pawhuska, Oklahoma, for maps, logs or other information.



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The Oil and Gas Journal
TULSA, OKLA.

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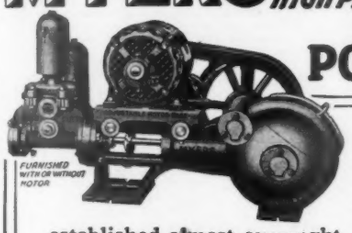

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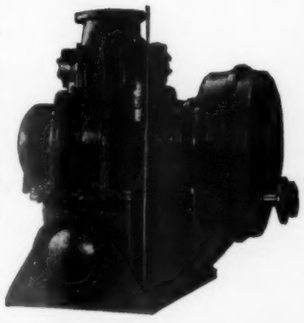

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NOTICE

OUR attention has been called to the fact that certain manufacturers appear to be marketing, or planning to market, an orifice device for the measurement of gas, air, water or oil, which infringes U. S. Patent No. 1569305 issued to Anson Robinson, January 12, 1926. This patent broadly covers orifice fittings and is owned by the Robinson Orifice Fitting Company.

All manufacturers and sellers of devices which infringe the above patent will be vigorously prosecuted.

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June 1st, 1929

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS
Pipe Line Statement for June.

Runs

	Month	Dly. av.
Prairie P. L. Co.*	4,590,000	153,000
Gulf P. L. Co.	1,928,503	64,283
Texas P. L. Co.	776,754	25,892
Empire P. L. Co.	1,467,410	48,914
Magnolia Petroleum Co.	2,168,966	72,299
Cosden P. L. Co.	825,769	27,525
Sinclair P. L. Co.*	3,090,000	103,000
Oklahoma P. L. Co.	3,076,298	102,543
Other Lines*	6,270,000	209,000
Total June	24,193,700	806,456
Total May	24,994,401	806,271
Difference	801,701	185

Shipments

Prairie P. L. Co.†	6,482,036	216,068
Gulf P. L. Co.	1,861,270	62,042
Texas P. L. Co.	1,140,621	38,021
Empire P. L. Co.	1,307,260	43,575
Magnolia Petroleum Co.	2,259,312	75,310
Cosden P. L. Co.	825,769	27,525
Sinclair P. L. Co.†	3,541,996	118,066
Oklahoma P. L. Co.	3,139,447	104,648
Other Lines*	6,300,000	210,000
Total June	26,857,711	895,250
Total May	26,895,092	867,584
Difference	37,381	27,666

Stocks

Prairie Oil & Gas Co.*	36,972,000
Gulf P. L. & Gypsy Oil Co.	9,805,481
The Texas Company	8,351,672
Empire P. L. Co.	4,067,028
Mid-Continent Petr. Corp.	3,646,027
Sinclair Crude Oil Purch. Co.*	20,400,000
Magnolia Petroleum Co.	9,899,785
Oklahoma P. L. Co.	3,139,985
Carter Oil Co.	10,865,322
Other Companies*	10,675,000
Total June	117,822,300
Total May	118,519,294
Difference	696,994

*Estimated. †Prairie and Sinclair shipments include Texas crude oil.

Note—Stocks do not include approximately 5,600,000 bbls. of crude oil held in storage on private tank farms and leases.

EASTERN PIPE LINE REPORT

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for June and July:

	June, '29	July, '29
National Transit	249,968.12	268,968.24
S W Pa. P L	92,002.02	96,958.15
Eureka P L	352,969.84	378,139.18
Buckeye P L (Macksb'g)	319,202.71	352,288.54
Buckeye P L (Cleve.)	11,542.95	12,698.84
Buckeye P L (Lima, etc.)	129,902.81	141,314.51
Indiana P L	6,724.29	5,565.67
Cumberland P L	171,863.19	217,391.68
N Y Transit	30,739.37	32,169.25
Tidewater P L	253,170.41	284,597.46
Pure Oil	55,379.02	164,484.42
Emery P L	65,056.05	72,335.54
Paragon Dev	15,728.09	16,335.33
Stoll Oil Ref	5,767.22	5,453.55
Total	1,765,016.19	2,048,704.46
Daily avg.	58,833.87	66,087.24

Note—Indian Refining Co. also reported other receipts of 353,591.45 bbls. Paragon Refining Co. had other receipts of 259,854.77 bbls. Paragon Development had other receipts of 560.26 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky for June and July:

	June, '29	July, '29
National Transit	525,961.70	448,413.13
S W Pa. P L	443,209.38	492,117.59
Eureka P L	249,279.44	268,871.91
Buckeye P L (Macksb'g)	192,141.28	239,542.25
Buckeye P L (Cleve.)	2,429.40	2,190.55
Buckeye P L (Lima, etc.)	1,574,302.18	1,656,505.17
Indiana P L	1,380,019.54	1,426,217.69
Cumberland P L	218,131.40	200,632.22
Southern P L		67,284.36
N Y Transit	250,768.40	308,215.81
Northern P L	160,597.19	173,766.22
Tidewater P L	222,328.15	245,185.79
Pure Oil	58,555.68	163,598.14
Emery P L	67,073.09	67,577.88
Paragon Ref	199,644.69	259,400.21
Paragon Dev	17,693.24	18,142.33
Total	5,562,134.76	6,037,661.25
Daily avg.	185,404.49	194,763.27

Indian Refining Co. reported other deliveries of 440,568.23 bbls.

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky and Indiana at the close of June and July:

	June, '29	July, '29
National Transit	691,399.07	692,912.76
S W Pa. P L	535,525.28	579,475.28
Eureka P L	1,214,331.14	1,209,058.70
Buckeye P L (Macksb'g)	462,009.23	431,101.70
Buckeye P L (Cleve.)	50,131.07	71,815.42
Buckeye P L (Lima, etc.)	2,088,348.18	2,470,370.27
Indiana P L	542,191.55	638,128.50
Cumberland P L	539,241.87	559,326.34
Southern P L	471,032.50	417,168.75
N Y Transit	256,751.69	235,029.71
Northern P L	332,496.47	416,713.78
Tidewater P L	1,279,682.60	1,109,732.21
Pure Oil	10,619.05	17,189.77
Emery P L	7,937.53	12,197.88
Paragon Ref	23,504.69	22,399.32
Indiana Ref	145,225.30	59,096.91
Paragon Dev	6,051.72	4,897.15
Tuscarora	264,796.11	265,071.90
Total	8,921,275.05	9,211,595.35
Increase	17,715.35	
Increase		290,320.30

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern Pipe Lines at the close of June and July showing the gross stocks of the above fields:

	June, '29	July, '29
Penn'a	3,279,171.77	3,230,774.85
Lima	635,542.29	701,522.68
Kentucky	718,933.39	780,445.07
Mid-Continent	3,914,745.95	4,226,436.12
Illinois	372,881.65	272,416.63
Total	8,921,275.05	9,211,595.35

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1926	1927	1928	1929
Jan.	55,630	56,209	52,904	51,749
Feb.	60,394	61,298	57,002	51,833
Mar.	61,644	63,247	57,485	54,252
April	63,019	60,927	56,812	58,444
May	60,580	60,284	62,067	59,902
June	61,121	62,757	58,230	58,833
July	63,206	58,674	57,144	66,087
Aug.	61,815	60,870	57,745	.....
Sept.	64,639	60,285	53,487	.....
Oct.	161,132	147,080	58,100	.....
Nov.	67,774	57,275	53,565	.....
Dec.	58,755	53,089	52,025	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1926	1927	1928	1929
Jan.	156,056	141,227	146,465	165,721
Feb.	159,488	138,534	167,368	159,387
Mar.	150,239	133,777	158,883	161,474
April	152,374	140,227	172,935	169,737
May	160,998	144,594	180,559	184,281
June	160,267	149,772	188,024	185,404
July	160,045	151,850	189,470	194,763
Aug.	151,929	188,653	192,853	.....
Sept.	158,915	144,213	194,138	.....
Oct.	161,132	147,036	176,000	.....
Nov.	172,608	150,975	176,898	.....
Dec.	136,428	144,504	173,572	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1927	1928	1929
Jan.	9,718,008	12,276,710	7,596,564
Feb.	10,119,162	12,180,419	8,738,835
Mar.	10,794,044	12,239,725	9,002,058
April	11,112,295	11,740,125	8,978,173
May	11,359,381	11,602,468	8,903,560
June	11,493,673	11,287,678	8,921,275
July	11,458,128	10,819,331	9,211,595
Aug.	11,989,115	10,236,743	.....
Sept.	12,212,716	9,660,910	.....
Oct.	12,047,661	9,229,709	.....
Nov.	11,939,740	8,366,553	.....
Dec.	12,340,297	7,539,555	.....

Franklin Pipe Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1928—	Runs	Shipments	Stocks
June	3,153.08	2,779.02	17,922.58
July	2,902.50	3,628.02	17,197.06
Aug.	2,874.11	2,350.13	17,721.04
Sept.	2,820.31	5,255.42	15,285.93
Oct.	1,289.93	538.89	17,551.93
Nov.	2,663.53	788.47	19,426.99
Dec.	3,053.60	3,167.53	19,426.99
1929—			
Jan.	2,099.90	.....	19,313.86
Feb.	2,469.47	6,873.20	17,009.23
March	3,330.82	3,595.01	16,745.04
April	4,864.07	4,243.59	17,365.52
May	2,688.59	2,455.54	17,598.57

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, August 1	2,215,713.59
Run from wells	583,490.36
Other receipts	310,310.99
Regular deliveries	749,945.27
Other deliveries	484,396.59

The amount of Illinois oil run by the Tidewater Pipe Co. in July was 27,616.43 bbls. Deliveries were 78,214.17 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1928—	Runs	Deliveries
Aug.	639,074.85	671,864.02
Sept.	570,307.91	737,292.50
Oct.	626,147.64	626,290.40
Nov.	576,332.88	702,589.93
Dec.	584,633.00	491,517.26
1929—		
Jan.	570,727.38	545,084.66
Feb.	517,330.17	503,387.70
March	728,319.67	586,049.60
April	515,374.27	654,297.96
May	608,981.60	673,812.83
June	568,454.70	818,845.97
July	611,106.79	828,159.44

Tidewater Pipe Co., Ltd., also delivered in July, 232,272.03 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					Total all ports
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Fort Arthur Sabine Pass	Tampa	Total	
January	15,838	.....	16,676	11,838	7,938	52,290	.....	.....	.....	.....	5,161	57,451
February	14,214	.....	38,750	17,250	11,607	81,821	.....	.....	.....	.....	3,750	85,571
March	19,903	968	31,258	18,581	7,355	78,065	.....	.....	.....	.....	.....	78,065
April	16,667	.....	32,333	13,233	2,234	64,467	.....	.....	.....	.....	7,333	66,200
May	16,226	2,416	31,326	10,806	2,129	62,903	.....	.....	.....	.....	.....	62,903
June	14,866	3,167	23,100	10,300	6,100	57,533	.....	.....	.....	.....	.....	57,533
July	15,387	4,806	34,290	19,388	2,452	76,323	.....	.....	.....	.....	4,161	80,484

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					Total all ports
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Fort Arthur Sabine Pass	Tampa	Total	
January	11,936	8,903	130,065	34,871	15,709	201,484	.....	34,808	4,098	1,287	40,193	241,677
February	13,750	15,071	135,179	32,750	17,893	214,643	.....	34,357	821	143	35,321	249,964
March	18,548	26,064	145,516	39,162	28,162	257,452	.....	42,581	2,322	.....	44,903	302,355
April	19,733	18,367	137,233	50,267	22,567	248,167	6,867	25,066	10,367	1,500	43,800	291,967
May	29,806	19,258	138,000	49,936	22,322	259,322	6,677	26,323	3,000	1,323	37,323	296,645
June	31,433	8,667	134,600	42,967	18,300	235,967	8,600	22,633	11,800	2,033	45,066	281,033
July	40,097	15,129	111,677	43,420	31,516	241,839	4,774	12,097	9,516	161	26,548	268,387

GROSS PRODUCTION IN THE UNITED STATES FOR 12 MONTHS (REVISED)

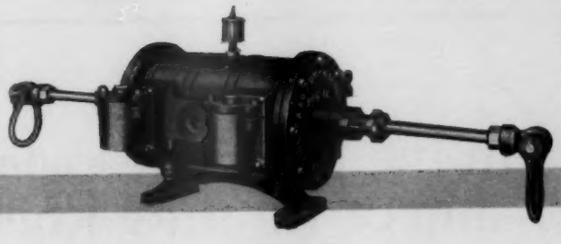
(In barrels of 42 gallons)

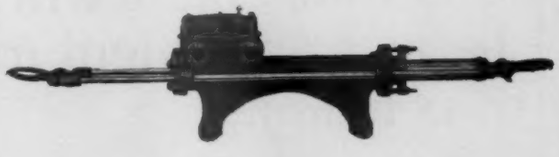
1928-29		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
July:	Month	19,754,458	18,809,188	22,055,737	3,171,548	2,792,139	2,238,090	2,492,586	3,487,000	74,800,746
	Daily average	637,241	606,748	711,475	102,308	90,069	72,131	80,406	112,484	2,412,927
August:	Month	19,444,899	20,840,804	22,339,131	3,147,058	2,711,787	1,989,264	2,561,840	3,556,000	76,590,783
	Daily average	627,255	672,284	720,448	101,518	87,477	64,170	82,640	114,709	2,470,670
September:	Month	18,908,169	22,456,860	21,554,269	3,047,250	2,540,070	1,830,225	2,432,430	3,229,000	75,998,273
	Daily average	630,272	748,562	718,207	101,575	84,669	61,007	81,047	104,300	2,533,279
October:	Month	19,430,992	23,431,071	22,176,853	3,058,460	2,652,484	1,836,221	2,571,822	3,612,000	76,769,903
	Daily average	626,806	755,841	715,376	98,660	85,564	59,233	82,962	116,516	2,540,964
November:	Month	19,907,526	22,078,680	20,791,798	2,977,800	2,476,080	1,801,914	2,388,870	3,348,000	75,770,668
	Daily average	663,584	735,956	693,059	99,260	82,536	60,064	79,629	111,600	2,505,689
December:	Month	21,574,703	22,425,722	22,180,102	2,988,400	2,521,571	1,846,841	2,289,040	3,581,000	79,407,379
	Daily average	695,958	723,410	715,487	96,400	81,341	59,576	73,840	115,516	2,561,528
January:	Month	23,385,939	22,575,874	23,412,226	3,861,641	2,453,526	1,807,887	2,076,070	3,439,000	82,012,163
	Daily average	754,385	728,254	755,233	92,311	79,146	58,318	66,970	110,936	2,645,554
February:	Month	22,300,707	20,464,164	20,816,269	3,567,968	2,154,194	1,569,939	1,965,656	3,113,000	74,941,228
	Daily average	796,454	730,863	743,424	91,356	76,936	56,068	70,202	111,184	2,676,472
March:	Month	24,324,729	20,838,262	24,358,592	2,951,076	2,303,724	1,756,153	2,195,828	3,586,000	82,314,359
	Daily average	784,669	672,202	784,669	95,196	74,314	56,650	70,833	115,677	2,655,302
April:	Month	23,295,060	20,235,290	23,493,097	3,112,740	2,188,680	1,702,479	2,085,030	3,524,000	79,636,376
	Daily average	776,502	674,512	783,102	103,758	72,956	56,750	69,501	117,467	2,654,546
May:	Month	24,053,351	21,345,453	24,489,101	3,665,099	2,320,158	1,713,261	2,252,522	3,879,000	83,617,945
	Daily average	775,915	688,563	789,965	118,229	71,618	55,267	72,662	125,129	2,697,353
June:	Month	24,624,627	20,561,112	24,698,029	3,636,150	2,112,270	1,699,581	2,180,752	3,887,000	83,399,521
	Daily average	820,821	685,371	823,267	121,205	70,337	56,653	72,692	129,567	2,779,984
	Total 12 Months	261,005,160	256,062,480	272,365,144	37,175,190	29,126,682	21,791,846	27,492,441	42,241,000	947,259,944
	Daily average	715,082	701,541	746,207	101,850	79,799	59,706	75,322	115,729	2,595,231

There is a GASO Pump for every purpose using any available power

GASO WALKING BEAM PUMP No. 601, *For Oil or Water,* is adapted for use on leases where no pumping power is available, connecting direct to the beam by means of wood or pipe pitman. Has an extra long stroke and can be set for straight line pull. For 400 to 600-pound working pressures.

GASO WALKING BEAM AND POWER PUMPS Nos. 604 and 604½, *For Gas or Vacuum,* are used in taking the gas from pumping wells or to put vacuum on the wells. Connect to the walking beam with wood or pipe pitman, or to the power or surface rods on a pumping well. Give 26 to 28 points vacuum.





GASO RODLINE PUMP No. 201 is a simple, easily operated pump for general service. It is used in connection with the rod or shackle line between the power and well, or connected to the power direct with a pitman.

As Oil Industry pump specialists, we offer a *complete* line of pumps designed specifically for super service under the exacting conditions encountered in the Industry.

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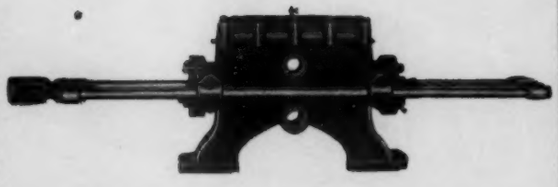
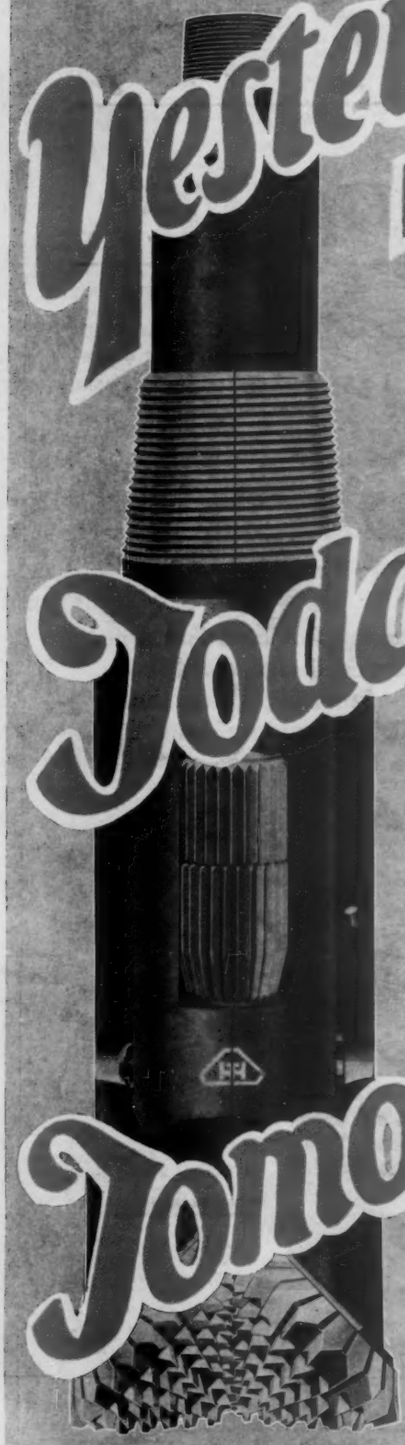


GASO PISTON POWER PUMP No. 301 (Jerker Pattern) is designed for the high pressure of main pipe lines, usually above 600 pounds, and is equally suitable for lease service, or any other low pressure work around refineries or pipe line stations where push and pull or crank power can be utilized. 750 to 300 pounds working pressure.

GASO PUMPS
for every oil industry need



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